Facilitator's Guide

For students aged 12-13

Be ready, be safe.

Expect THE UNEXPECTED™

Canadian Red Cross

Canadian Red Cross

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Be ready, be safe.

***Expect the Unexpected*™ Emergency Preparedness Program for students aged 12-13**

Facilitator's Guide

Acknowledgements

The Canadian Red Cross Society would like to thank the American Red Cross Society for authorizing the adaptation of concepts and activities pertaining to its *Masters of Disasters*™ program. We would also like to express our gratitude to the volunteers and staff who participated directly or indirectly in the development of this educational preparedness program.

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This program continues to be offered through the media sponsorship of:

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Introduction

The Canadian Red Cross plays an essential part in emergencies. It provides numerous services to people affected by disasters to fulfill part of their essential needs such as food, clothing and shelter. It also provides personal services for moral support and first aid. During evacuations, it is often responsible for registering and informing evacuees.

The Canadian Red Cross has developed a resource to help teachers educate their students about natural disasters and other emergencies: *Expect the Unexpected* ™. It is the only educational program in Canada that relates to provincial and territorial study curricula, while also aiming to change attitudes and behaviours regarding disaster preparedness.

Expect the Unexpected is intended for youth, aged 7 to 13, their parents, as well as educators who work with them. The program consists of three kits, which include a facilitator's guide and an activity booklet: *It can happen, be ready*, for youth aged 7 and 8; *Facing the unexpected, be prepared*, for youth aged 9 to 11; and Be ready, be safe for youth aged 12 and 13. An activity booklet is also available for parents: *Let's plan for the unexpected*.

This facilitator's guide is intended for educators of students aged 12 and 13.
It is part of a series of teaching resources for this age group.

The guide is divided into four parts. The first part describes the overall preparedness program. The second part identifies concepts and the preferred teaching approach. The third part pertains to activities corresponding to the sheets provided in the activity booklet intended for students, and the fourth part provides additional information that will be useful in implementing the program.

Be ready, be safe.

Program objectives

This section of the preparedness program intended for students aged 12 and 13 is designed to provide them with what is required to face unexpected situations that could occur in their daily life. More specifically, students will:

- Know the natural disasters that could occur in their community and in the world;
- Know which disaster caused accidentally by humans could occur in their community;
- Understand the link between disasters and climate change;
- Know some of the actions to take to be better prepared for emergencies;
- Know the attitudes and behaviours to adopt in emergencies;
- Know some of the actions to take after an emergency;
- Know the school evacuation plan;
- Realize the importance of their role in case of an emergency.

Links to the study programs

Educators are asked to teach a variety of programs from the Ministry of Education and must take into consideration a great number of teaching objectives. This program can be linked to the objectives of some provincial and territorial programs across Canada, and helps complement class teaching and learning.

Tools

This section of the preparedness program includes five types of teaching and communication tools:

• Facilitator's guide

The guide is intended for teachers. It provides information that allows the educator to lead youth through the learning process and relies on the use of the various teaching and communication tools developed for the program.

The facilitator's guide includes answer keys that allow the teacher to correct students' answers. Educators can also create transparencies from the activity booklet, which simplifies the review of answers in a large group.

• Activity booklet

The booklet is intended for students. It facilitates learning and the development of attitudes and skills by reading information, recording observations from research results, answering questions, playing games (some of which are interactive) and using the Internet, etc. It ensures that information is permanently available as well as being a reference tool for youth. Several of the activities can be carried out with the assistance of parents. These activities, identified by this symbol  , were modified to become preparedness activities intended for families. They are combined in a special booklet, *Let's plan for the unexpected*, available on the Red Cross Web site: www.redcross.ca/expectheunexpected.

The activity booklet was designed as a series of activities from which teachers can choose exercises that best suit their students' needs. These activities can be conducted on theme days, on half days and can also be integrated in the daily planning. They can be linked to other activities or be done independently from one another.

• Activity booklet and certificate of participation for parents and students

The activity booklet, *Let's plan for the unexpected*, is intended for parents as a reference and simulation resource. It offers preparedness activities for the whole family to do at home. The activity booklet is available on the Canadian Red Cross Web site (www.redcross.ca/expecttheunexpected), in the section devoted to teaching materials for parents. It can be printed or consulted online.

The certificate of participation is found at the end of the activity booklet intended for families. Parents and their children can fill it out as soon as they have completed the suggested activities.

• Video

This video is used to introduce situation scenarios for a number of activities. It will pique the students' curiosity, arouse their interest, prompt questions and encourage group discussions and exchanges. This video is available on the Canadian Red Cross Web site (www.redcross.ca/expecttheunexpected), in the section devoted to teaching materials for educators. Participants should be encouraged to watch the video with their families.

• Mini-posters

The facilitator's guide includes four small posters that are detachable and can be used as part of simulations within certain activities. They stimulate curiosity and interest, and facilitate questions and group discussions. (Please note that mini-posters are only included in facilitator's guides which have activities that reference them.) The mini-posters are also available on the Canadian Red Cross Web site (www.redcross.ca/expecttheunexpected), in the section devoted to teaching materials for educators. They can be printed or consulted online.

• Poster

The poster can be consulted or downloaded from the Canadian Red Cross Web site (www.redcross.ca/expecttheunexpected), in the section devoted to teaching materials for teachers. The poster can be placed on walls in the school or classroom. It will make students more aware of the need to prepare for emergency situations. It can also be used as a trigger to introduce activities in the preparedness program.

Program evaluation

An evaluation form is provided at the end of this facilitator's guide and on the Canadian Red Cross Web site (www.redcross.ca/expectheunexpected), in the section devoted to teaching materials for teachers. It allows for the teacher or facilitator to comment on the program. Youth's comments can also be obtained by asking them to write a collective letter to the Red Cross.

General orientation

Content

Throughout the entire preparedness program, the content is presented in sequence, in order to suit the levels of the various age groups. Thus, the 7- to 8- and 9- to 11-year-old students are faced with unexpected situations that are simple and of a local nature. On the other hand, the 12- to 13-year-olds are asked to deal with more complex situations, on an international scale.

For the 12- to 13-year-olds, the activities cover the following topics:

Red Cross – dangers – natural disasters – extreme heat emergency – earthquake – tornado – lightning storm – flood – hurricane – tsunami – volcanic eruption – natural disasters and climate change – industrial or environmental accidents and release of hazardous material – preparation – emergency kit – first aid kit – emergency situation – emergency call – evacuation – evacuation plan – attitude – behaviour – commitment.

As students become more familiar with the natural and human elements in their environment, they are taught to distinguish between the benefits and dangers associated with some of these natural elements. The concept of a safety rule is discussed and linked to the natural elements. It is then discussed more generally in relation to unexpected events such as power failures, lightning storms, snowstorms and heat or cold waves. Students are then sensitized to climate change and its impact on natural disasters. Next, they learn about their own preparation to enable them to react effectively in emergencies. They again examine attitudes and behaviours to adopt in emergencies, as well as reflect on the emotions that can be experienced when an unexpected event occurs. Finally, emphasis is placed on fire prevention at school and at home.

Teaching approach

For each activity

Each activity in the first section of the preparedness program is designed according to the three steps of the teaching approach: situations, research and objectives.

- **Situations**

In this first step, students become familiar with the content and teaching objectives linked to the activity. The teacher makes the content meaningful by linking it to their experience and prior knowledge.

- **Research**

In the second step, students learn the contents of the activity using diversified and adapted teaching strategies. They collect data, organize and record information.

- **Recap**

In this last step, students recap the activity. They summarize what they have learned, compare it to their initial understanding and evaluate their degree of success.

In each section

Each section of the preparedness program features three types of activities that correspond to the three steps of the teaching approach:

- Questions related to the situation;
- Research;
- Summary and review of learning.

Activities

Sheet	Type of activity	Objective	Means	Method	Intellectual and technical skills	Duration
1		Become familiar with Red Cross principles.	Situation.	Two teams.	Analyze, establish relationships and summarize.	 30 min.
2		Identify a few natural disasters and their effects on personal safety.	Viewing a video on the Internet/questionnaire.	In pairs.	Identify and establish relationships.	 70 min.
3		Understand what causes earthquakes.	Experiment.	In pairs.	Identify, establish relationships and summarize.	 90 min.
4		Understand what causes tornadoes.	Experiment.	In pairs.	Identify, establish relationships and summarize.	 80 min.
5		Understand what causes floods.	Experiment.	In pairs.	Identify, establish relationships and summarize.	 70 min.
6		Understand what causes lightning during a lightning storm.	Experiment.	In pairs.	Identify, establish relationships and summarize.	 65 min.
7		Understand what causes hurricanes, tsunamis and volcanic eruptions.	Internet research, reading and text analysis.	In pairs.	Identify, establish relationships and summarize.	 60 min.
8		Describe natural disasters throughout the world.	Research.	In pairs.	Identify and establish relationships.	 90 min.
9		Explain the links between natural disasters and climate change.	Reading and analysis of newspaper article.	In pairs.	Establish relationships and summarize.	 60 min.
10		Explain the links between natural disasters and climate change in some areas of the world.	View a video, map observation, questionaire reading and game.	In pairs.	Analyze, establish relationships and summarize.	 60 min.
11		Become familiar with the concept of extreme heat and raise the student's awareness of its impact on human health.	Brainstorm; discussion; questions and answers.	Class; individual (with help of parents).	Identify, establish relationships.	 60 min.
12		Define what extreme heat events are, explore historical events and explain how weather is forecasted.	Newspaper article; research project.	Groups.	Identify, establish relationships; summarize.	 60 min.

Activities

13		Define heat by referring to the four variables that constitute heat: temperature, radiant heat, humidity and wind. Explain how the body regulates itself when exposed to heat.	Quiz game.	Groups.	Identify, establish relationships; summarize.	60 min.
14		Recognize heat-related illnesses and name preventive and response measures.	Scenarios.	Groups.	Identify, establish relationships.	30 min.
WWW 15		Identify people who are most vulnerable to heat and find solutions to help them take preventive action.	Research; presentation.	Groups.	Identify, establish relationships; summarize.	90 min.
16		Prepare an extreme heat checklist.	Scenario; role play.	Groups.	Application.	60 min.
17		Describe natural disasters caused by human activity that occured in Canada.	Research.	In pairs.	Identify and establish relationships.	90 min.
18		Become familiar with the contents of a survival kit and first aid interventions.	Research questions/reminder.	In pairs or with parents' help.	Identify, establish relationships and summarize.	30 min.
19		Identify potential hazards in the bedroom.	Checklist to complete.	Individually or with parents' help.	Identify, establish relationships and summarize.	30 min.
20		Become familiar with the school evacuation plan.	Analysis of a plan and research questions.	In pairs.	Identify, establish relationships and summarize.	30 min.
WWW 21		Describe the attitudes and behaviours to adopt before and after a natural disaster.	Situation/charts to fill in/true or false.	In pairs or with parents' help.	Identify, establish relationships and summarize.	60 min.
22		Distinguish between myths and facts related to behaviours to adopt during natural disasters.	Association game.	In pairs or with parents' help.	Identify, establish relationships and summarize.	40 min.
23		Identify responsibilities to assume in case of an emergency at home.	Writing up a comment plan.	In teams of four or five, individually or with parents' help.	Identify and establish relationships.	70 min.
24		Know parties who intervene during a disaster and their roles.	Simulation.	In pairs.	Establish relationships and summarize.	70 min.

The activities identified with this symbol can be carried out with the parents' help. These activities have also been modified for preparedness activities to be done by the whole family and are part of a special activity booklet available on the Red Cross Web site at: www.redcross.ca/expecttheunexpected. The teacher is encouraged to refer parents to the educational materials for them on the Red Cross Web site.

The activities identified with this symbol indicate that the educator can use Internet resources to lead the activity.

The seven Fundamental Principles of the Red Cross

30 min.

Task description

Through a group discussion and reading, students become familiar with the seven Fundamental Principles of the Red Cross.

Method suggested

1. Ask students if they are familiar with the Red Cross. Ask them where they have come into contact with the organization ("babysitting course", first aid course, water safety course, etc.).

2. Ask them if they know about the origins of the Red Cross emblem and the history of the organization. Invite them to talk about what they know. Round out their comments with information from Annex 1 of the facilitator's guide.

3. Tell students that the Red Cross is part of an international movement that intervenes in all countries in accordance with seven principles or rules. Hand out the list of definitions of the principles (simplified version for youth) and make sure they understand the new vocabulary. To do so, refer to the more complete definitions at the end of the facilitator's guide.

4. Ask students to form pairs. Read the instructions on Sheet 1 with them and assign a situation to each team. Ask students to associate the situation with one of the seven Fundamental Principles of the Red Cross, by referring to the definitions provided at the end of the activity booklet.

5. Once the sheets are filled out, review them as a group to check students' answers. Ask them to define, in their own words, the seven Fundamental Principles of the Red Cross and discuss how these principles are integrated in the activities of the Red Cross.

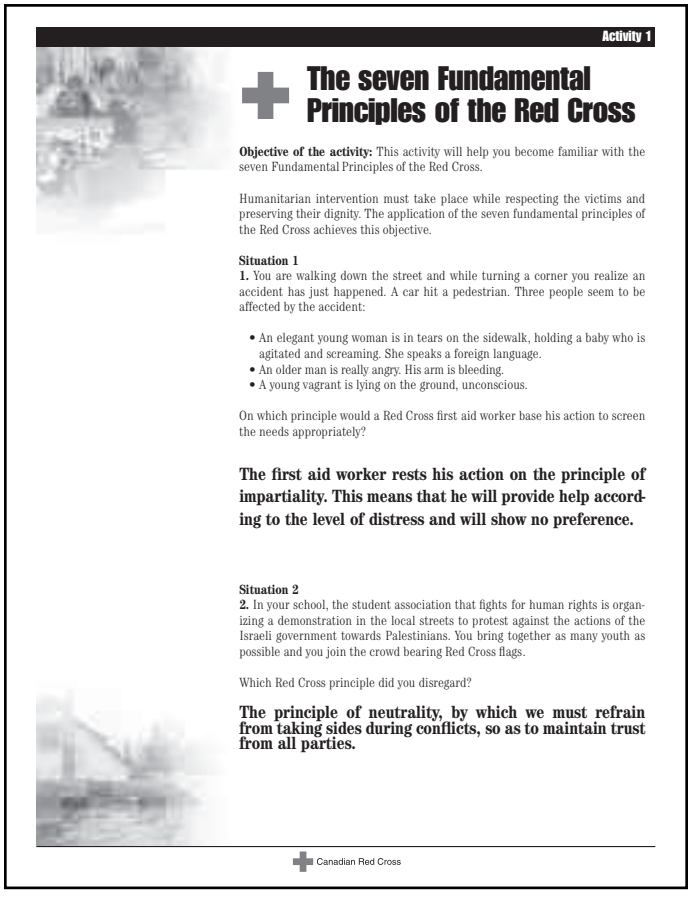
6. Mention to students that this preparedness program was developed by the Red Cross as part of its prevention activities.

7. Answer any questions.

Material required

- Sheet 1 of the activity booklet
- Annex 1 – The International Red Cross and Red Crescent Movement
- Definitions of the seven fundamental principles of the Red Cross, at the end of the activity booklet and the facilitator's guide

Answer key



Activity 1

The seven Fundamental Principles of the Red Cross

Objective of the activity: This activity will help you become familiar with the seven Fundamental Principles of the Red Cross.

Humanitarian intervention must take place while respecting the victims and preserving their dignity. The application of the seven fundamental principles of the Red Cross achieves this objective.

Situation 1
1. You are walking down the street and while turning a corner you realize an accident has just happened. A car hit a pedestrian. Three people seem to be affected by the accident:

- An elegant young woman is in tears on the sidewalk, holding a baby who is agitated and screaming. She speaks a foreign language.
- An older man is really angry. His arm is bleeding.
- A young vagrant is lying on the ground, unconscious.

On which principle would a Red Cross first aid worker base his action to screen the needs appropriately?

The first aid worker rests his action on the principle of impartiality. This means that he will provide help according to the level of distress and will show no preference.

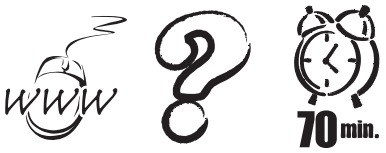
Situation 2
2. In your school, the student association that fights for human rights is organizing a demonstration in the local streets to protest against the actions of the Israeli government towards Palestinians. You bring together as many youth as possible and you join the crowd bearing Red Cross flags.

Which Red Cross principle did you disregard?

The principle of neutrality, by which we must refrain from taking sides during conflicts, so as to maintain trust from all parties.

Canadian Red Cross

To know more about natural disasters



Task description

Using a videotape and documentary information, students answer questions on the most common natural disasters that occur in their province and in Canada.

Method suggested

1. After having viewed the videotape, ask students for their comments and questions pertaining to the content. To stimulate the discussion, ask them the following questions:
   - What is the objective of this research?
   - What information does research on the Internet provide on natural disasters:
     – In the world?
     – In Canada?
     – In their province?
   - Who are they meeting?
   - What are the discussion topics? Ask them to name the types of natural disasters that may occur in their province and in Canada.

2. Ask students to form pairs and to fill out Sheet 2 by answering the questions on the documentary information text.

3. Once the sheets are filled out, review them as a group by asking students to summarize what they have written. Ask them if these natural disasters have ever happened in Canada and in their province.

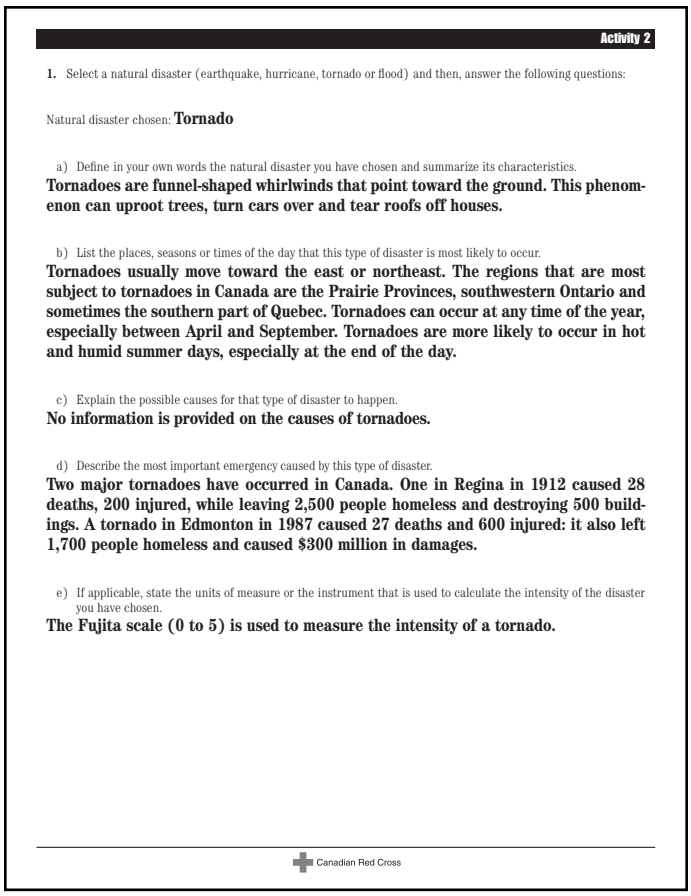
4. Answer any questions.

Material required

- Sheet 2 of the activity booklet
- Videotape

Answer key

Next page



Activity 2

1. Select a natural disaster (earthquake, hurricane, tornado or flood) and then, answer the following questions:

Natural disaster chosen: **Tornado**

a) Define in your own words the natural disaster you have chosen and summarize its characteristics.
Tornadoes are funnel-shaped whirlwinds that point toward the ground. This phenomenon can uproot trees, turn cars over and tear roofs off houses.

b) List the places, seasons or times of the day that this type of disaster is most likely to occur.
Tornadoes usually move toward the east or northeast. The regions that are most subject to tornadoes in Canada are the Prairie Provinces, southwestern Ontario and sometimes the southern part of Quebec. Tornadoes can occur at any time of the year, especially between April and September. Tornadoes are more likely to occur in hot and humid summer days, especially at the end of the day.

c) Explain the possible causes for that type of disaster to happen.
No information is provided on the causes of tornadoes.

d) Describe the most important emergency caused by this type of disaster.
Two major tornadoes have occurred in Canada. One in Regina in 1912 caused 28 deaths, 200 injured, while leaving 2,500 people homeless and destroying 500 buildings. A tornado in Edmonton in 1987 caused 27 deaths and 600 injured: it also left 1,700 people homeless and caused $300 million in damages.

e) If applicable, state the units of measure or the instrument that is used to calculate the intensity of the disaster you have chosen.
The Fujita scale (0 to 5) is used to measure the intensity of a tornado.

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Activity 2

1. Select a natural disaster (earthquake, hurricane, tornado or flood) and then, answer the following questions:

Natural disaster chosen: **Hurricane**

a) Define in your own words the natural disaster you have chosen and summarize its characteristics.
Hurricanes are huge tropical storms that can cause great damage. They are also called "tropical cyclones" or "typhoons". Violent winds and heavy rains accompany them.

b) List the places, seasons or times of the day that this type of disaster is most likely to occur.
Hurricanes originate in the ocean, usually close to the equator. In North America, the hurricane season extends from June to November. The Atlantic Provinces are most commonly affected by hurricanes.

c) Explain the possible causes for that type of disaster to happen.
No information is provided on the causes of hurricanes.

d) Describe the most important emergency caused by this type of disaster.

In Canada, over the past 110 years, only three category 3 hurricanes reached land. The most deadly hurricane in Canadian history occurred in September 1775. It caused 4,000 deaths on the coast of Newfoundland.

e) If applicable, state the units of measure or the instrument that is used to calculate the intensity of the disaster you have chosen.
It is the Saffir-Simpson scale that allows for public safety authorities to evaluate the possible damage a hurricane may cause.

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Activity 2

1. Select a natural disaster (earthquake, hurricane, tornado or flood) and then, answer the following questions:

Natural disaster chosen: **Flood**

a) Define in your own words the natural disaster you have chosen and summarize its characteristics.
Floods are caused by stretches of water that overflow because of an excessive rise in the water level.

b) List the places, seasons or times of the day that this type of disaster is most likely to occur.
Floods occur everywhere in Canada because the country has many hydrographic networks that branch out extensively.

c) Explain the possible causes for that type of disaster to happen.
The rise in water level may be caused by heavy precipitation in the summer, by the rapid thawing of snow in the spring, as well as by ice jams and ice breakups caused by heavy rains and mild weather in the spring.

d) Describe the most important emergency caused by this type of disaster.
The floods in the Saguenay region in July 1996 and in the southern part of Manitoba in the spring of 1997 required the evacuation of many people and also caused millions of dollars in material damage.

e) If applicable, state the units of measure or the instrument that is used to calculate the intensity of the disaster you have chosen.
No information provided.

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Activity 2

1. Select a natural disaster (earthquake, hurricane, tornado or flood) and then, answer the following questions:

Natural disaster chosen: **Earthquake**

a) Define in your own words the natural disaster you have chosen and summarize its characteristics.
Earthquakes or tremors are sudden movements of the Earth's crust. They generally occur suddenly and leave very little time to react. However, major earthquakes are often preceded by weaker tremors.

b) List the places, seasons or times of the day that this type of disaster is most likely to occur.
Three regions are more subject to earthquakes: Western Canada, British Columbia and the Yukon, the southeastern part of Canada which includes the Atlantic coast, the St.Lawrence and the Ottawa valleys, as well as Northern Canada.

c) Explain the possible causes for that type of disaster to happen.
The structure of the Earth's crust might be weaker or it can move a few centimetres each year, thereby creating some resistance and causing seismic events. Usually its movements and its uplifts at various places in the country cause earthquakes.

d) Describe the most important emergency caused by this type of disaster.
In the 20th century alone, over one million people have died because of earthquakes. In Canada, only one earthquake in the Atlantic Ocean, south of Newfoundland, caused deaths in 1929. It produced an enormous tidal wave that carried away 27 people.

e) If applicable, state the units of measure or the instrument that is used to calculate the intensity of the disaster you have chosen.
The Richter scale is rated from 1 to 9, but it can sometimes exceed 9. It is used to measure the energy produced by an earthquake.

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Activity 2

2. Describe a lightning storm in 15 lines by using the information from the text.

A lightning storm is characterized by an electrical discharge (or lightning bolt) with a lightning flash and thunder. This electrical discharge can reach 100 million volts and a temperature of 30,000 degrees Celsius. To calculate the distance that separates you from the lightning bolt, count the number of seconds between the moment you see the lightning flash and the moment you hear the thunder. By dividing the number by 3, you get the distance in kilometres. A lightning storm usually occurs at the end of the day when it is hot and humid. Air currents that produce lightning storms create humidity and separate the electrical charges from one another. Then, the discharge occurs to produce a lightning flash and a lightning bolt.

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What is an earthquake?

Task description

Students perform a simple experiment, so that they gain a deeper understanding of earthquakes.

Method Suggested

1. Ask students what they know about earthquakes. Ask them what they know about the causes of this natural phenomenon.

2. Have them form pairs and do the experiment described on Sheet 3 of the activity booklet.

3. Ask them to read the activity sheet and collect the material needed for the experiment.

4. After the experiment, as a group, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.

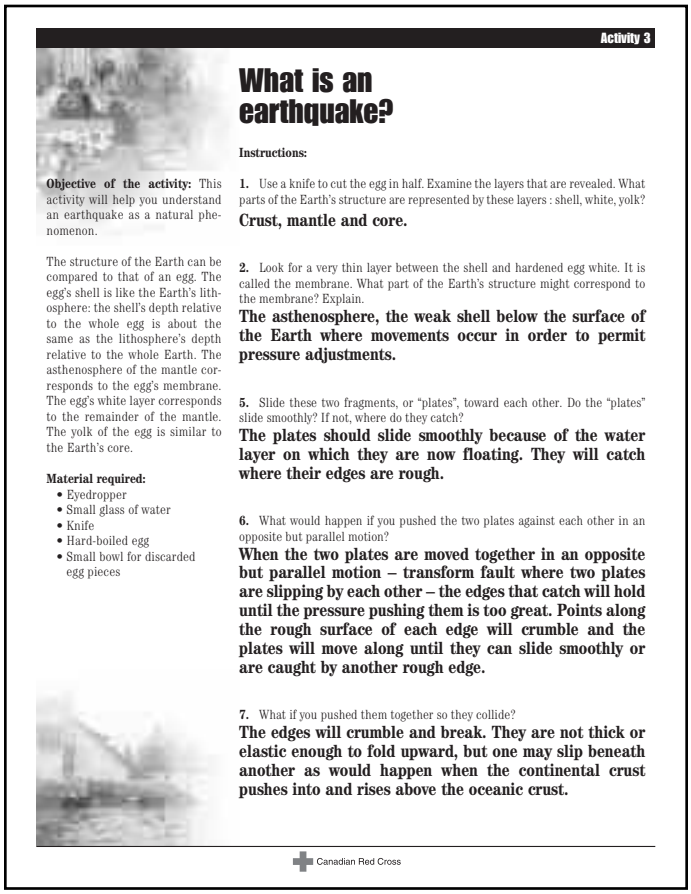
5. Summarize the main points and synthesize what they have discovered about the ways earthquakes happen.

6. Answer any questions they may have.

Material required

- Sheet 3 of the activity booklet
- Eyedropper, small glass of water, knife, hardboiled egg, plate for discarded egg pieces

Answer key



Activity 3

What is an earthquake?

Objective of the activity: This activity will help you understand an earthquake as a natural phenomenon.

The structure of the Earth can be compared to that of an egg. The egg's shell is like the Earth's lithosphere: the shell's depth relative to the whole egg is about the same as the lithosphere's depth relative to the whole Earth. The asthenosphere of the mantle corresponds to the egg's membrane. The egg's white layer corresponds to the remainder of the mantle. The yolk of the egg is similar to the Earth's core.

Material required:
- Eyedropper
- Small glass of water
- Knife
- Hard-boiled egg
- Small bowl for discarded egg pieces

Instructions:

1. Use a knife to cut the egg in half. Examine the layers that are revealed. What parts of the Earth's structure are represented by these layers : shell, white, yolk?
Crust, mantle and core.

2. Look for a very thin layer between the shell and hardened egg white. It is called the membrane. What part of the Earth's structure might correspond to the membrane? Explain.
The asthenosphere, the weak shell below the surface of the Earth where movements occur in order to permit pressure adjustments.

5. Slide these two fragments, or "plates", toward each other. Do the "plates" slide smoothly? If not, where do they catch?
The plates should slide smoothly because of the water layer on which they are now floating. They will catch where their edges are rough.

6. What would happen if you pushed the two plates against each other in an opposite but parallel motion?
When the two plates are moved together in an opposite but parallel motion – transform fault where two plates are slipping by each other – the edges that catch will hold until the pressure pushing them is too great. Points along the rough surface of each edge will crumble and the plates will move along until they can slide smoothly or are caught by another rough edge.

7. What if you pushed them together so they collide?
The edges will crumble and break. They are not thick or elastic enough to fold upward, but one may slip beneath another as would happen when the continental crust pushes into and rises above the oceanic crust.

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What is a tornado?

Task description:

Students perform a simple experiment, so that they gain a deeper understanding of tornadoes.

Method Suggested

1. Ask students what they know about tornadoes. Ask them what they know about the causes of this natural phenomenon.

2. Have students form pairs and perform the experiment described on Sheet 4 of the activity booklet.

3. Ask them to read the activity sheet and collect the material needed for the experiment.

4. After the experiment, as a group, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.

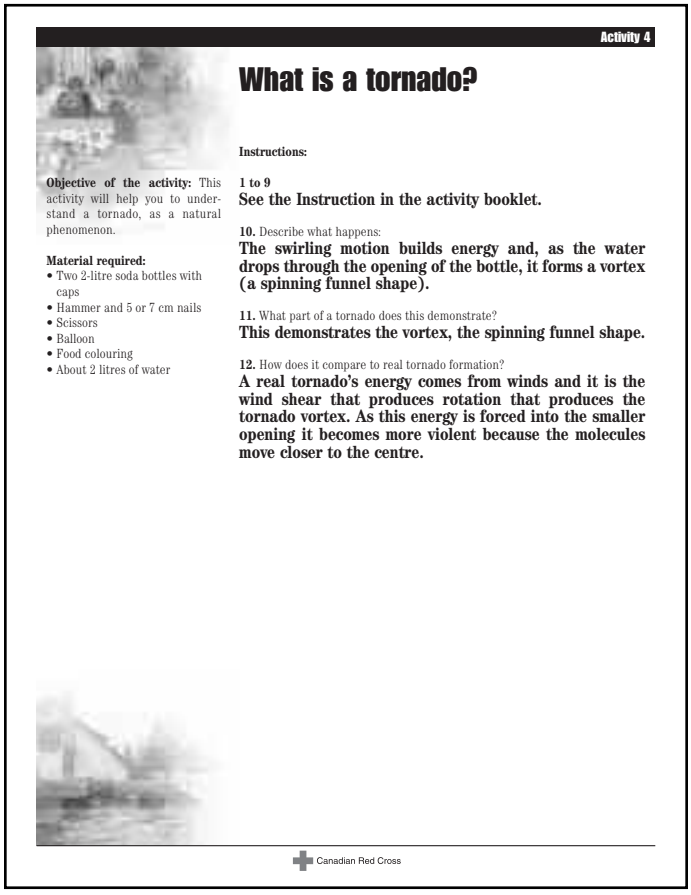
5. Summarize the main points and synthesize what they have discovered about the ways tornadoes happen.

6. Answer any questions they may have.

Material required

- Sheet 4 of the activity booklet
- Two 2-litre soda bottles with caps, hammer and 5 or 7 cm nails, scissors, balloon, food colouring, about 2 litres of water

Answer key



Activity 4

What is a tornado?

Objective of the activity: This activity will help you to understand a tornado, as a natural phenomenon.

Material required:
- Two 2-litre soda bottles with caps
- Hammer and 5 or 7 cm nails
- Scissors
- Balloon
- Food colouring
- About 2 litres of water

Instructions:

1 to 9
See the Instruction in the activity booklet.

10. Describe what happens:
The swirling motion builds energy and, as the water drops through the opening of the bottle, it forms a vortex (a spinning funnel shape).

11. What part of a tornado does this demonstrate?
This demonstrates the vortex, the spinning funnel shape.

12. How does it compare to real tornado formation?
A real tornado's energy comes from winds and it is the wind shear that produces rotation that produces the tornado vortex. As this energy is forced into the smaller opening it becomes more violent because the molecules move closer to the centre.

Canadian Red Cross

What is a flood?

Task description
Students perform a simple experiment, so that they gain a deeper understanding of floods.

Method suggested
1. Ask students what they know about floods. Ask them what they know about the causes of this natural phenomenon.

2. Have students form pairs and perform the experiment described on Sheet 5 of the activity booklet.

3. Ask them to read the activity sheet and collect the material needed for the experiment.

4. After the experiment, as a group, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.

5. Summarize the main points and synthesize what they have discovered about the ways floods happen.

6. Answer any questions they may have.

Material required
- Sheet 5 of the activity booklet
- Large pan, water source with hose or watering can, large basin or plate for drainage, soil of different types and porosity, toy houses, buildings and cars

Answer key
Next page

What is a flood?

Objective of the activity: This activity will help you to better understand floods, what makes them happen and what damage they can cause.

Material required:
- Large pan
- Water source with hose or watering can
- Large basin or plate for drainage
- Soil of different types and porosity
- Toy houses, buildings and cars
- Spray bottles

Instructions:

1. Fill the large pan with soil. Mold the soil into hills, valleys and dry environment. Place the toy buildings and cars into the stream table "landscape" to create a town.

Fill the spray bottles with water and spray the water onto the stream table to simulate steady rain. What happens when the water hits the ground?

Water infiltrates the soil.

2. After a few minutes, increase the opening on the nozzles of the spray bottles and pour a larger amount of water onto the landscape. What happens now?

Water runs off the soil.

3. Does the water infiltrate the soil? Why?

Yes, because the air in the soil is replaced by water until the soil is saturated.

4. Would different soils have slowed or quickened the flooding process? Why?

Yes. Water infiltrates different types of soil at different speeds. Some soils will speed up the flooding process; others will allow time for the water to infiltrate the soil and even stop the flooding process.

5. What happens if any type of soil reaches its saturation point?

Water runs off the soil and floods rivers and streams.

6. What happens to the streams and streambeds when the soil reaches its saturated point?

Water rises over their banks.

7. Where does the runoff go on the stream table?

It floods across the landscape.

8. What areas of the simulated landscape would be the flood plain? Why?

Those areas in which the rising waters begin to accumulate. Usually these areas are low-lying and near the streams and riverbeds.

9. What areas accumulate runoff water?

Low-lying areas in the flood plains.

10. Where would be the safest place to build? Why?

On high ground farther from the streams and riverbeds so that the rising water cannot reach the buildings.

What is lightning?

Task description

Students perform a simple experiment to learn more about lightning.

Method suggested

1. Ask students what they know about storms and lightning. Ask them what they know about the causes of this natural phenomenon.

2. Have students form pairs and perform the experiment described on Sheet 6 of the activity booklet.

3. Ask them to read the activity sheet and collect the material needed for the experiment.

4. After the experiment, as a group, discuss the findings and observations made by the teams. Ask each team to choose a spokesperson to present the information entered on the analysis report form.

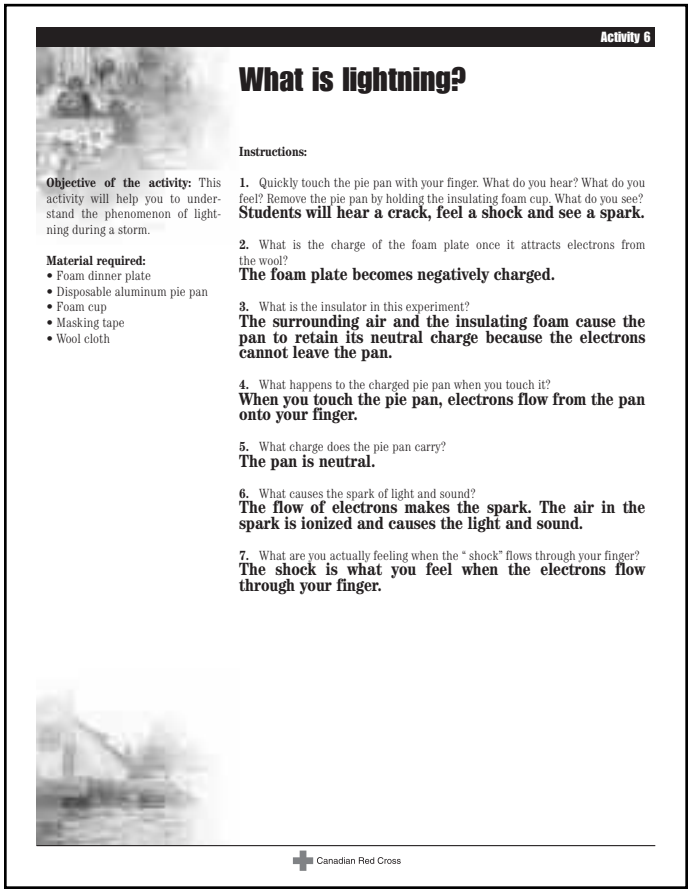
5. Summarize the main points.

6. Answer any questions they may have.

Material required

- Sheet 6 of the activity booklet.
- Foam dinner plate, disposable aluminum pie pan, foam cup, masking tape, wool cloth

Answer key



Activity 6

What is lightning?

Instructions:

Objective of the activity: This activity will help you to understand the phenomenon of lightning during a storm.

Material required:
- Foam dinner plate
- Disposable aluminum pie pan
- Foam cup
- Masking tape
- Wool cloth

1. Quickly touch the pie pan with your finger. What do you hear? What do you feel? Remove the pie pan by holding the insulating foam cup. What do you see?
Students will hear a crack, feel a shock and see a spark.

2. What is the charge of the foam plate once it attracts electrons from the wool?
The foam plate becomes negatively charged.

3. What is the insulator in this experiment?
The surrounding air and the insulating foam cause the pan to retain its neutral charge because the electrons cannot leave the pan.

4. What happens to the charged pie pan when you touch it?
When you touch the pie pan, electrons flow from the pan onto your finger.

5. What charge does the pie pan carry?
The pan is neutral.

6. What causes the spark of light and sound?
The flow of electrons makes the spark. The air in the spark is ionized and causes the light and sound.

7. What are you actually feeling when the " shock" flows through your finger?
The shock is what you feel when the electrons flow through your finger.

Canadian Red Cross

Hurricanes, tsunamis and volcanic eruptions

Task description

From research on the Internet, students gain a deeper understanding of the following phenomena: hurricanes, tsunamis and volcanic eruptions.

Method suggested

1. Ask students what they know about hurricanes, tsunamis and volcanic eruptions. Ask them what they know about the causes of these natural phenomena.

2. Have students form pairs and perform the activity described on Sheet 7 of the activity booklet.

3. Suggest they visit the Web site of *Sécurité publique du Québec*, Youth Section, at: http://www.msp.gouv.qc.ca/jeunesse/index_en.html. Ask them to choose the "Disasters" section, then item 4, "Natural Disasters". Ask them to carefully read the information on hurricanes, tsunamis and volcanic eruptions and then to answer questions on Sheet 7.

4. Once the sheets are filled out, review them as a group and discuss the teams' findings. Ask each team to choose a spokesperson to present the information entered on the sheet.

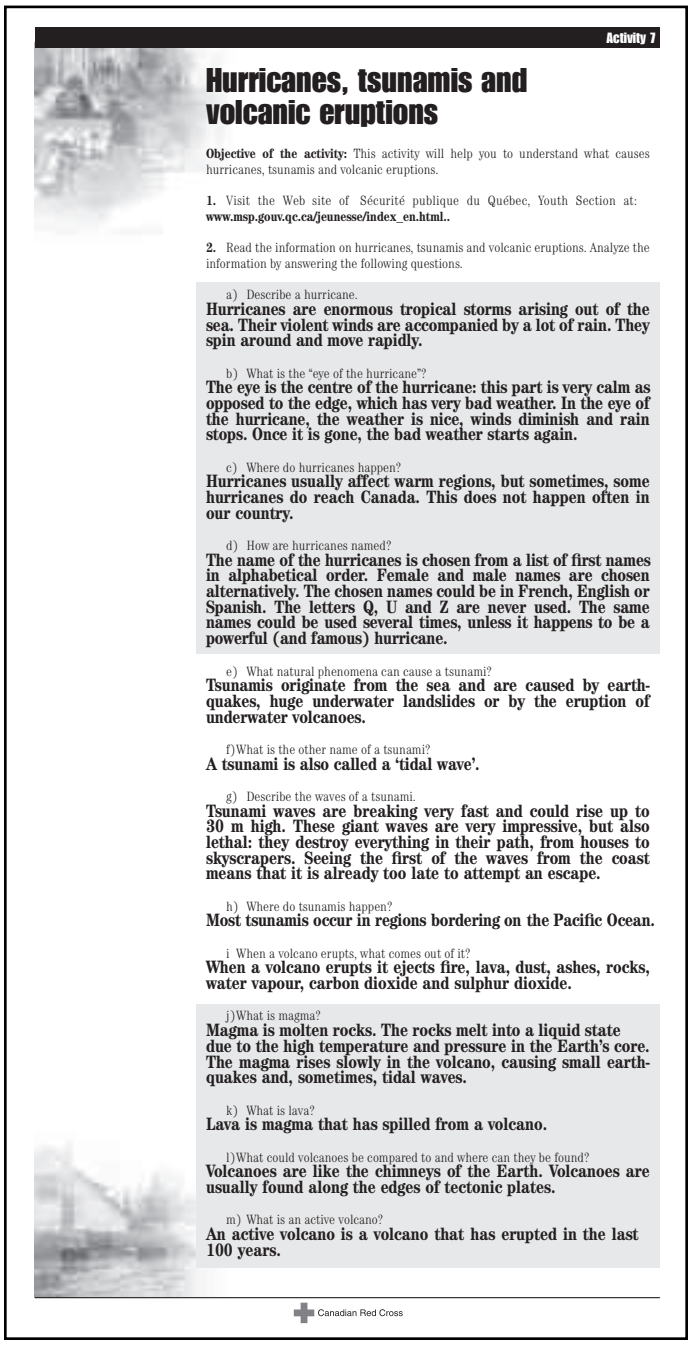
5. Summarize the main points and synthesize what they have discovered about the ways lightning occurs.

6. Answer any questions they may have.

Material required

- Web site of *Sécurité publique du Québec*, Youth Section at: http://www.msp.gouv.qc.ca/jeunesse/index_en.html
- Sheet 7 of the activity booklet

Answer key



Activity 7

Hurricanes, tsunamis and volcanic eruptions

Objective of the activity: This activity will help you to understand what causes hurricanes, tsunamis and volcanic eruptions.

1. Visit the Web site of Sécurité publique du Québec, Youth Section at: **www.msp.gouv.qc.ca/jeunesse/index_en.html..**

2. Read the information on hurricanes, tsunamis and volcanic eruptions. Analyze the information by answering the following questions.

a) Describe a hurricane.
Hurricanes are enormous tropical storms arising out of the sea. Their violent winds are accompanied by a lot of rain. They spin around and move rapidly.

b) What is the "eye of the hurricane"?
The eye is the centre of the hurricane: this part is very calm as opposed to the edge, which has very bad weather. In the eye of the hurricane, the weather is nice, winds diminish and rain stops. Once it is gone, the bad weather starts again.

c) Where do hurricanes happen?
Hurricanes usually affect warm regions, but sometimes, some hurricanes do reach Canada. This does not happen often in our country.

d) How are hurricanes named?
The name of the hurricanes is chosen from a list of first names in alphabetical order. Female and male names are chosen alternatively. The chosen names could be in French, English or Spanish. The letters Q, U and Z are never used. The same names could be used several times, unless it happens to be a powerful (and famous) hurricane.

e) What natural phenomena can cause a tsunami?
Tsunamis originate from the sea and are caused by earthquakes, huge underwater landslides or by the eruption of underwater volcanoes.

f) What is the other name of a tsunami?
A tsunami is also called a 'tidal wave'.

g) Describe the waves of a tsunami.
Tsunami waves are breaking very fast and could rise up to 30 m high. These giant waves are very impressive, but also lethal: they destroy everything in their path, from houses to skyscrapers. Seeing the first of the waves from the coast means that it is already too late to attempt an escape.

h) Where do tsunamis happen?
Most tsunamis occur in regions bordering on the Pacific Ocean.

i) When a volcano erupts, what comes out of it?
When a volcano erupts it ejects fire, lava, dust, ashes, rocks, water vapour, carbon dioxide and sulphur dioxide.

j) What is magma?
Magma is molten rocks. The rocks melt into a liquid state due to the high temperature and pressure in the Earth's core. The magma rises slowly in the volcano, causing small earthquakes and, sometimes, tidal waves.

k) What is lava?
Lava is magma that has spilled from a volcano.

l) What could volcanoes be compared to and where can they be found?
Volcanoes are like the chimneys of the Earth. Volcanoes are usually found along the edges of tectonic plates.

m) What is an active volcano?
An active volcano is a volcano that has erupted in the last 100 years.

Canadian Red Cross

Natural disasters throughout the world

Task description

By doing research on the Internet and in other media, students examine reports of natural disasters throughout the world.

Method suggested

1. Ask students if Canada is the only country that has experienced natural disasters. Have a discussion with them to demonstrate what they know.

2. Have students form pairs and read Web sites, newspapers, magazines or Internet sites for reports about natural disasters that have occurred in the world.

3. After they have found an article of their choice, ask them to read it and analyze it using Sheet 8 of the activity booklet.

4. When the analyses are complete, review them as a group and share the results of the research and analyses that teams have accomplished. Ask each team to choose a spokesperson to report its findings.

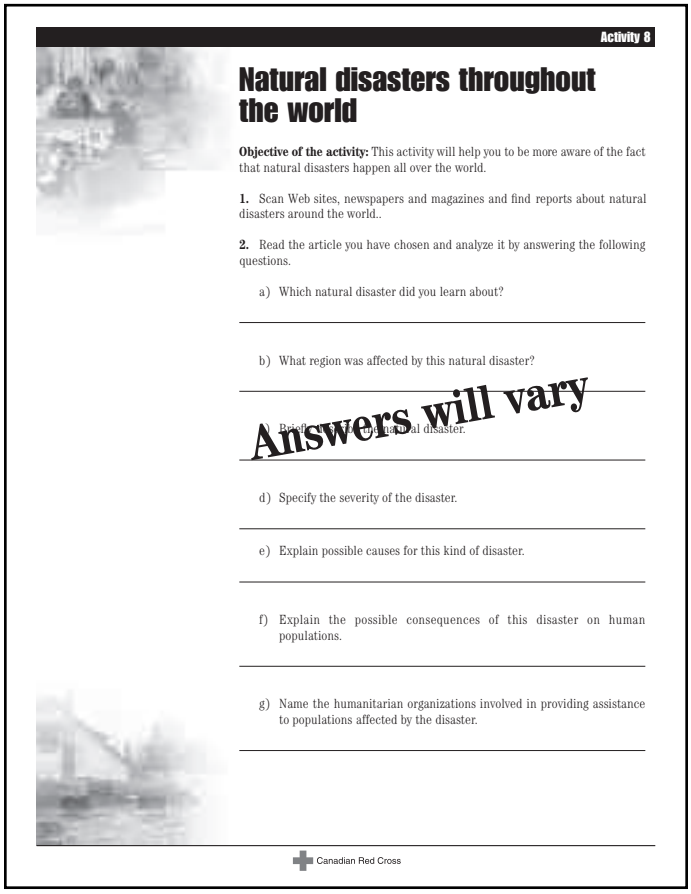
5. Summarize the main points.

6. Answer any questions they may have.

Material required

- Sheet 8 of the activity booklet
- Complementary information: you will find more information on natural disasters at the end of the activity booklet

Answer key


Activity 8

Natural disasters throughout the world

Objective of the activity: This activity will help you to be more aware of the fact that natural disasters happen all over the world.

1. Scan Web sites, newspapers and magazines and find reports about natural disasters around the world..

2. Read the article you have chosen and analyze it by answering the following questions.

a) Which natural disaster did you learn about?

b) What region was affected by this natural disaster?

Answers will vary

c) Briefly describe the natural disaster.

d) Specify the severity of the disaster.

e) Explain possible causes for this kind of disaster.

f) Explain the possible consequences of this disaster on human populations.

g) Name the humanitarian organizations involved in providing assistance to populations affected by the disaster.

Canadian Red Cross

Climate change and natural disasters

Task description

Students read and analyze a newspaper article to learn about the connection between climate change and natural disasters.

Method suggested

1. Read the title of the article in Annex 2.

2. Have students form pairs. Hand out a copy of the article in Annex 2 to each team.

3. Ask students to comment on the article. Ask them to explain the concepts of “climate change” and “greenhouse effect”.

4. Ask them to read the article, analyze its content and fill in Sheet 9 of the activity booklet.

5. After the analyses are completed, review them as a group to share the teams’ work. Ask each team to choose a spokesperson to report the information entered on the sheet.

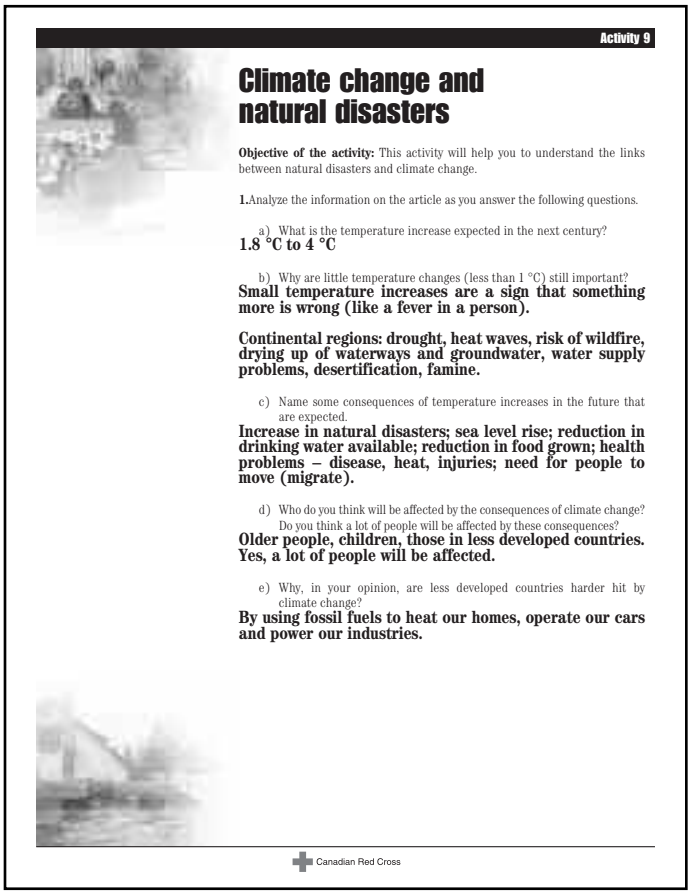
6. Summarize the information.

7. Answer any questions they may have.

Material required

- Sheet 9 of the activity booklet.
- Photocopy of Annex 2 for each student.

Answer key



Activity 9

Climate change and natural disasters

Objective of the activity: This activity will help you to understand the links between natural disasters and climate change.

1. Analyze the information on the article as you answer the following questions.

a) What is the temperature increase expected in the next century?
1.8 °C to 4 °C

b) Why are little temperature changes (less than 1 °C) still important?
Small temperature increases are a sign that something more is wrong (like a fever in a person).

Continental regions: drought, heat waves, risk of wildfire, drying up of waterways and groundwater, water supply problems, desertification, famine.

c) Name some consequences of temperature increases in the future that are expected.
Increase in natural disasters; sea level rise; reduction in drinking water available; reduction in food grown; health problems – disease, heat, injuries; need for people to move (migrate).

d) Who do you think will be affected by the consequences of climate change? Do you think a lot of people will be affected by these consequences?
Older people, children, those in less developed countries. Yes, a lot of people will be affected.

e) Why, in your opinion, are less developed countries harder hit by climate change?
By using fossil fuels to heat our homes, operate our cars and power our industries.

Canadian Red Cross

What could happen around the world?

Task description

Students become familiar with climate change and its impact on some small island states of the world.

Method suggested

1. Ask students to research the terms "climate change" and "greenhouse effect" on the Internet. Ask them to explain the terms in their own words, and to name a few natural disasters that could happen around the world because of climate change.

2. Have students form pairs and hand out Annex 10 to each team, as well as Sheet 10 of the activity booklet. Ask them to read the article and to carefully examine the map on the sheet.

3. Have students observe that small island states are widely distributed across the world. Ask them if these islands are all exposed to the same risks, and to specify how they are so exposed. Ask pairs to answer the two questions on Sheet 10. Mention that natural disasters could become more common for small island states and in other regions of the world because of climate change.

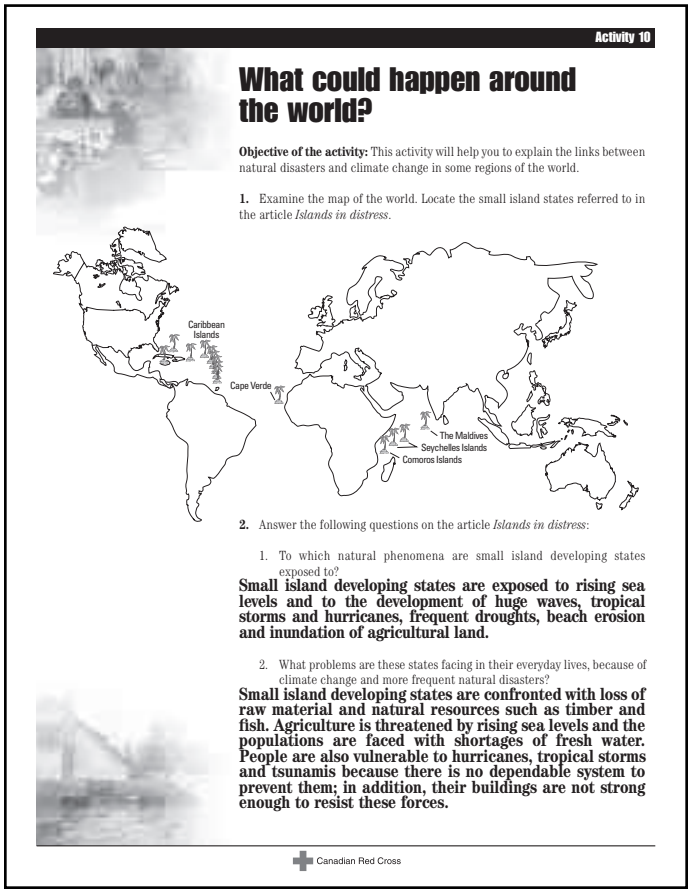
4. Emphasize the important role they can play in relation to climate change, by reducing greenhouse gas emissions. Suggest they read Annex 1 of the activity booklet – *Climate Change: What can you do?* Discuss it with them. To conclude the activity, encourage students to become energy sleuths and to look up ways to reduce greenhouse gas emissions.

5. Answer any questions they may have.

Material required

- Annex 10 – *Islands in distress*
- Sheet 10 of the activity booklet
- Annex 1 of the activity booklet – *Climate change: What can you do?*

Answer key



Activity 10

What could happen around the world?

Objective of the activity: This activity will help you to explain the links between natural disasters and climate change in some regions of the world.

1. Examine the map of the world. Locate the small island states referred to in the article *Islands in distress*.

2. Answer the following questions on the article *Islands in distress*:

1. To which natural phenomena are small island developing states exposed to?

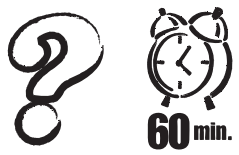
Small island developing states are exposed to rising sea levels and to the development of huge waves, tropical storms and hurricanes, frequent droughts, beach erosion and inundation of agricultural land.

2. What problems are these states facing in their everyday lives, because of climate change and more frequent natural disasters?

Small island developing states are confronted with loss of raw material and natural resources such as timber and fish. Agriculture is threatened by rising sea levels and the populations are faced with shortages of fresh water. People are also vulnerable to hurricanes, tropical storms and tsunamis because there is no dependable system to prevent them; in addition, their buildings are not strong enough to resist these forces.

Canadian Red Cross

What does heat mean to you?



Objective of assignment

The objective of this assignment is to introduce the topic of heat and to raise the students' awareness of heat and its impact on health.

Task description

This activity is done in two parts: a class brainstorm and take-home assignment. To start, the students are asked to think about heat and what it means to them. They will be invited to participate in a brainstorming exercise to discuss concepts related to heat. Secondly, the students will be asked to bring the assignment home and are encouraged to discuss the concept of heat with their family. They will be asked to share their answers with the class.

Method suggested

1. Inform the students that they will be discussing heat.

2. Ask the students what comes to their mind when they think about heat.

3. Ask the students to be spontaneous and to answer with the first things that come to mind.

4. Write the students' answers on the board or on a flip chart paper. Prepare the board or the flip chart paper as shown below before starting the activity.

5. Encourage the students to find answers that correspond to the letters of the alphabet.

6. Congratulate the students for their work and continue the activity by asking them if they remember a time when it was very hot.

7. Collect some answers and instruct the students to open their activity booklets to Activity 11.

8. Tell the students to fill in the answers to those questions in their activity booklets.

9. Read the instructions with the students and ask them to answer the questions with their families. Tell them that they have to discuss the concept of heat with their families.

10. Let the students know that the results of their discussions at home will be presented to the class.

11. Continue the discussion by asking the students what comes to their mind when they think about heat.

12. Remind them to work on their assignment.

13. Answer any questions.

A	**N**
B	**O**
C	**P**
D	**Q**
E	**R**
F	**S**
G	**T**
H	**U**
I	**V**
J	**W**
K	**X**
L	**Y**
M	**Z**

Discussion of take home assignment

1. Review the answers to the questions by asking the students to share the discussion they had with their families.

2. Answer any questions.

Duration
- Class time: 45 minutes
- Home: 15 to 20 minutes

Material required
- Activity booklet
- Crayons or markers
- Flip chart paper or board prepared with the alphabet letters

Answer key
Examples of possible answers – please note that the answers may vary

Air conditioning, air quality	**N**et, napkin, natural hazard
Beach, boat	**O**utdoor activity
Cooling off, climate change	**P**ool, perspiration
Drinking juice	**Q**uick breathing
Environment, extreme weather	**R**ain
Fun, fan	**S**un, summer, sweat, sunscreen, shade
Game	**T**ravelling, tan
Hot, humidity, hat, hazard, heat	**U**V index, UV rays
Ice cream	**V**acation
Juice	**W**ind, water, wet
Kayak, kite	**X**
Lake, liquid	**Y**acht
Melon, mosquitoes	**Z**oo

Extreme heat events in Canada

60 min.

Objective of the activity

The objective of the activity is to increase the students' awareness to the fact that many regions in Canada experience hot weather and, as the climate continues to change, they will experience a greater intensity and frequency of extreme weather events, including heat. The activity will enable the students to define what extreme heat events are, explore historical events when extreme heat severely affected populations, and explain briefly how the weather is forecasted.

Task description

The activity consists of a research project with a newspaper article to introduce the topic. The students will begin by reading the article as a group and then be divided into teams. Each team will select from a list of topics. Each team will present the results of their research to their classmates.

Method suggested

1. Introduce the topic by telling the students that they will learn more about extreme heat events in Canada by doing a research project.

2. Hand out copies of Annex 3 (newspaper article) to the students, and let them read it to themselves.

3. Group the students in teams of four.

4. Ask the students to go to Activity 12 in their activity booklets and read the instructions with them.

5. Allow the students 10 minutes to read the newspaper article.

6. When the time is up, assign one research topic per team. The list of topics is listed in Activity 12.

7. Ask the groups to organize their research and prepare to present their findings to their classmates.

8. Tell the students that they can go to the school or public library to gather their data. They can also use their home computer if they have one.

9. Answer any questions.

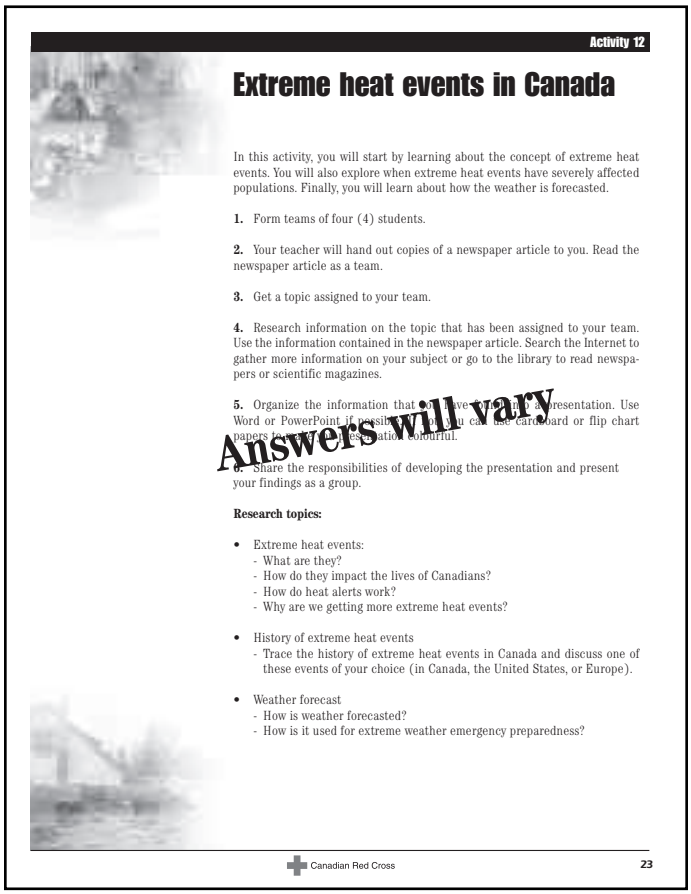
Duration

- Class time: 30 minutes to introduce the project. Discussion time will vary. Allow about 5 minutes per presentation.
- Home time: approx. 60 minutes depending on the teams' involvement in the project.

Material required

- Computer
- Internet
- Activity booklet
- Annex 3: *Newspaper article*

Answer key



Activity 12

Extreme heat events in Canada

In this activity, you will start by learning about the concept of extreme heat events. You will also explore when extreme heat events have severely affected populations. Finally, you will learn about how the weather is forecasted.

1. Form teams of four (4) students.

2. Your teacher will hand out copies of a newspaper article to you. Read the newspaper article as a team.

3. Get a topic assigned to your team.

4. Research information on the topic that has been assigned to your team. Use the information contained in the newspaper article. Search the Internet to gather more information on your subject or go to the library to read newspapers or scientific magazines.

5. Organize the information that you have found into a presentation. Use Word or PowerPoint if possible. Otherwise, you can use cardboard or flip chart papers to make your presentation colourful.

6. Share the responsibilities of developing the presentation and present your findings as a group.

Answers will vary

Research topics:

- Extreme heat events:
  - What are they?
  - How do they impact the lives of Canadians?
  - How do heat alerts work?
  - Why are we getting more extreme heat events?
- History of extreme heat events
  - Trace the history of extreme heat events in Canada and discuss one of these events of your choice (in Canada, the United States, or Europe).
- Weather forecast
  - How is weather forecasted?
  - How is it used for extreme weather emergency preparedness?

Canadian Red Cross 23

What is heat and how does the body regulate temperature?

60 min.

Objective of the activity

The objective of the activity is to have the students learn about heat and to have them define heat by referring to the four variables that constitute heat: temperature, radiant heat, humidity and wind. The students will also learn how the human body regulates itself when exposed to heat.

Task description

The activity consists of a quiz game. The students work in teams. They will read a text in their activity books and then answer questions regarding the text. Each team should write their answers on a flip chart paper and reported back to the class at the end of the activity.

Method suggested

1. Tell the students that they will learn what heat is and how the human body can cool itself down when the weather is very hot.

2. Group the students in teams of four (4). Ask each group to name a spokesperson who will report back their answers written on the flip chart paper.

3. Distribute flip chart papers and markers to each team.

4. Ask the students to go to Activity 13 in their activity booklets and read the instructions with them.

5. Ask the teams to read the text in Annex 4 and to discuss its content by answering questions. Instruct the students to write the answers to the questions on the flip chart paper you provided.

6. Assign a group of questions to each team.

7. Allow the students 20 – 30 minutes to read the text and to answer the questions.

8. When the time is up, ask the group spokesperson to report the information written on the flip chart papers.

9. Review the answers and give feedback if necessary.

10. Answer any questions.

Duration

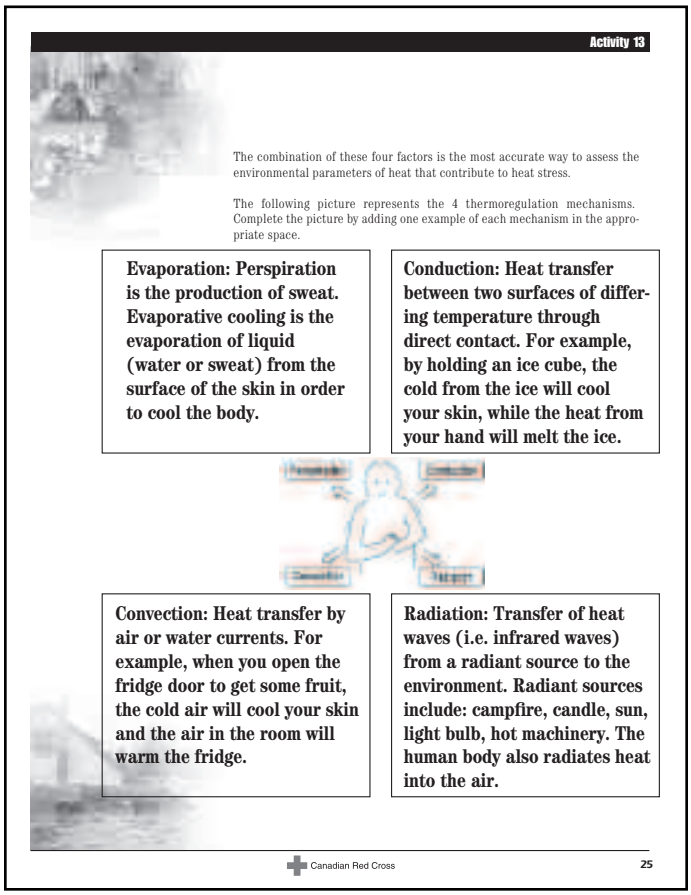
Class time: 60 minutes

Material required

- Annex 4: *Heat and the body*
- Activity booklet
- Flip chart papers
- Markers

Answer key

Examples of thermoregulation mechanisms



Group 1

1. What is heat?

A.: Heat is a composite of four factors: temperature, radiant heat, humidity and wind.

2. How do you define humidity?

A.: Humidity is the amount of moisture in the air.

3. What is your body temperature?

A.: Approximately 37°C/98.6°F

4. How does your body regulate its temperature when it is very hot outside?

A.: When it is very hot and humid, evaporative cooling is responsible for most of the body cooling. Please provide the exact answer.

Group 2

1. How does the human body maintain its normal body temperature?

A.: The human body maintains its temperature by internal biological regulation, which aids in absorbing heat when it is cold and dissipates heat when it is hot.

2. Name the four mechanisms upon which your body depends to regulate itself. Explain one of the four mechanisms.

A.Evaporation, convection, conduction and radiation.
Evaporation: the evaporation of the water from the skin and the respiratory passages
Convection: the transfer of heat from a warm object toward a cooler object.
Conduction: the transfer of heat by direct physical contact from a warm object to a cooler object.
Radiation: The transfer of heat waves (i.e. infrared waves) from a radiant source to the environment. Radiant sources include: campfire, candle, sun, light bulb, hot machinery. The human body also radiates heat into the air.

3. True or false: Convection and conduction is the same thing. If false, explain the difference.

A.: False. Convection is the transfer of heat through air or water. Conduction is the transfer of heat by direct physical contact.

4. True or false: When it is windy, your body cools down faster. If true, explain the statement.

A.: True. Because wind enables your sweat to evaporate faster, therefore cooling the body down quicker.

Group 3

1. What is conduction?

A.: Conduction is the transfer of heat by direct physical contact from a warm object to a cooler object. Conduction can also transfer cold by direct physical contact.

2. True or false: Heat and temperature is the same thing. If false, explain what heat is and what temperature is.

A.: False. Heat is a composite of four factors: temperature, radiant heat, humidity and wind. Temperature is the measurement, using a thermometer, of how cold or hot it is outside.

3. True or false: Low humidity and high heat is a greater strain on the body than high humidity and high heat. Explain the statement.

A.: False. Because high humidity increases the amount of water vapour in the air. Therefore, slowing down the rate of sweat from your skin and by which your body can dissipate heat through evaporative cooling

4. How does the human body lose heat?

A.: The human body loses heat by contact with cool surfaces or cool air and is aided by sweat production, which cools your body as it evaporates and radiates heat into the environment.

Heat-related illnesses

30 min.

Objective of the activity
The objective of the activity is to have the students identify heat-related illnesses by learning the symptoms of each illness and naming several essential preventive and response measures when faced with heat-related illnesses.

Task description
The learning will take place through scenarios.

Method suggested
1. Tell the students that they will learn about heat-related illnesses, their symptoms, the appropriate preventive and response measures to take.

2. Explain briefly under what circumstances heat-related illnesses can occur and relate it back to the previous sections on the body's thermoregulation principles. Refer to the following notes:
- Our bodies create a tremendous amount of internal heat and are normally cooled down through sweating and radiating heat through our skin.
- Under certain circumstances, such as high temperatures and/or high humidity, or during vigorous exercise in hot weather, the body will have to work harder in order to regulate its temperature. This is called heat strain.
- If the strain of maintaining a normal core body temperature becomes too much, the body's cooling system may begin to fail and the internal body temperature can reach dangerous levels. The result can lead to non-emergency heat-related illnesses, such as heat cramps, heat edema and heat rashes or to a serious heat-related illness, such as heat exhaustion or heatstroke.

3. Hand out copies of Annex 5 – Heat-related illnesses, and review with the class.

4. Group the students in teams of four (4).

5. Tell the students to go to Activity 14 in their booklets, read the instructions with them.

6. Allow 15 minutes to complete exercise.

7. Once the time is up, review the content learned by having the students present their answers.

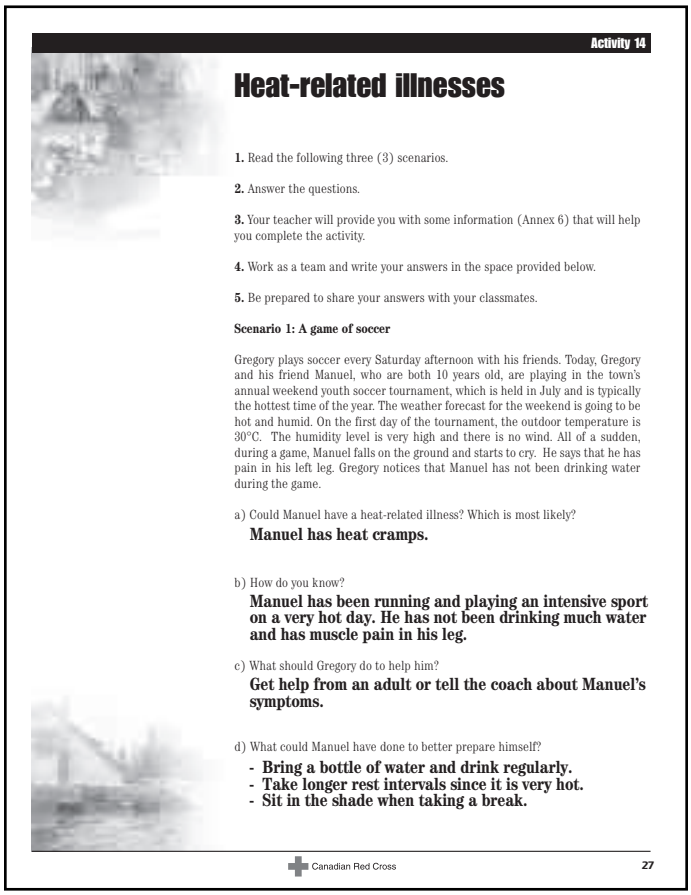
8. Provide feedback when needed.

9. Answer any questions.

Duration
Class time: 30 minutes

Material required
- Annex 5: *Heat-related illnesses*
- Activity booklet

Answer key



Activity 14

Heat-related illnesses

1. Read the following three (3) scenarios.

2. Answer the questions.

3. Your teacher will provide you with some information (Annex 6) that will help you complete the activity.

4. Work as a team and write your answers in the space provided below.

5. Be prepared to share your answers with your classmates.

Scenario 1: A game of soccer

Gregory plays soccer every Saturday afternoon with his friends. Today, Gregory and his friend Manuel, who are both 10 years old, are playing in the town's annual weekend youth soccer tournament, which is held in July and is typically the hottest time of the year. The weather forecast for the weekend is going to be hot and humid. On the first day of the tournament, the outdoor temperature is 30°C. The humidity level is very high and there is no wind. All of a sudden, during a game, Manuel falls on the ground and starts to cry. He says that he has pain in his left leg. Gregory notices that Manuel has not been drinking water during the game.

a) Could Manuel have a heat-related illness? Which is most likely?

Manuel has heat cramps.

b) How do you know?

Manuel has been running and playing an intensive sport on a very hot day. He has not been drinking much water and has muscle pain in his leg.

c) What should Gregory do to help him?

Get help from an adult or tell the coach about Manuel's symptoms.

d) What could Manuel have done to better prepare himself?

- **Bring a bottle of water and drink regularly.**
- **Take longer rest intervals since it is very hot.**
- **Sit in the shade when taking a break.**

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Activity 14

Scenario 2: A hike in the mountain

It is the middle of August. After a midday rain shower, Lucy and her older Aunt Mildred decide to go for a hike in the afternoon. The weather is very hot and humid from the rain and cloud cover. The two walk for about three (3) hours. When Aunt Mildred arrives home, she tells Lucy that she feels light-headed, hot and sick to her stomach. When Lucy asks if Aunt Mildred feels okay, she appears to be uncomfortable and cranky.

a) Could Aunt Mildred have a heat-related illness? Which is most likely?

Aunt Mildred has heat exhaustion.

b) How do you know?

She feels light-headed, hot and nauseous. She also appears to be uncomfortable and cranky.

c) What should Lucy do to help her aunt?

Lucy should bring her aunt to a cool place and have her rest. She should give her sips of water. If her aunt is wearing any tight, restrictive clothing, she should loosen up the clothing. She could also put cold water on her skin or fan her.

d) What could Aunt Mildred have done to better prepare herself?

- Check if the weather was appropriate for a walk in the mountain.
- Bring a bottle of water and drink regularly.
- Take small breaks.
- Splash her face with cool water to cool off.
- Wear loose fitting, breathable, light-coloured clothing.
- Take a cool bath or shower when she gets home to help her feel refreshed.

Activity 14

Scenario 3: An afternoon at the beach

It is the August long weekend and Tanya and Joe decide to go to the beach on the Saturday afternoon. The sky is blue, the sun is shining and the weather forecast calls for a high of 34°C. The level of humidity is high in the city. When they arrive at the beach, Tanya and Joe realize that it still feels humid and they have forgotten their beach umbrella at home. They don't really mind since there is a light, warm wind and they enjoy laying in the sun. As the afternoon goes on, Joe feels tired, weak and dizzy. Joe typically doesn't drink water so he has not been drinking much at the beach. He also hasn't been swimming yet. Later in the afternoon, he starts having cramps in his stomach and feels like vomiting, but he is unable to walk to the washroom. He is sweating a lot and says that he is very tired and hot. When Tanya asks him what is wrong, he is very confused and cannot answer simple questions. Then Joe loses consciousness.

a) Could Joe have a heat-related illness? Which is likely?

Joe has heatstroke.

b) How do you know?

- Joe feels tired, weak and dizzy.
- He has not been drinking much water.
- He has cramps in his stomach and feels like vomiting.
- He is unable to walk to the washroom.
- He is sweating a lot and he is very tired and hot.
- He is very confused and cannot answer simple questions.
- He loses consciousness.

c) What should Tanya do to help him?

Call 9-1-1 or the local emergency number.

d) What should have Joe and Tanya done to be better prepared?

- Check the weather outside and make sure it is appropriate to go to the beach.
- Bring an umbrella, avoid sun exposure and stay in the shade.
- Wear a hat with wide brim.
- Wear sunscreen lotion and sunglasses.
- Drink water and eat fruits that have high water content.
- Cool off by going for a swim.

Question

What is the first thing you should do when you are with someone who has heat stroke?

Call 9-1-1 or the local emergency number.

Heat-vulnerable groups

Objective of the activity

The objective of the activity is to have the students identify people most vulnerable to heat and the challenges they meet when faced with extreme heat events. The students will be tasked to find solutions to help vulnerable people take preventive actions.

Task description

The learning will take place through research and presentation.

Method suggested

1. Tell the students that they will learn about population groups vulnerable to heat, their challenges and the preventive measures they can take. Instruct the students that they will conduct research to learn the content.

2. Group the students in teams of four (4).

3. Ask the students to open their activity booklets to Activity 15 and go over the instructions with them.

4. Help the students in choosing one topic from the following list. Encourage the students to choose different topics.

- Older adult (grandmother, grandfather, or an older neighbour)
- Infants and young children (little brother, sister or cousin)
- People with chronic illness or physically impaired (someone who has been sick for a long time, or someone in a wheelchair or with a cane)
- Lower socio-economic status (low income, homeless)
- Newcomers to Canada and tourists
- Those who work in the heat (farmers, construction workers, miners)
- The physically active (marathon runners, recreational athletes)

5. Review the type of information for which the students have to search.

6. Tell the students that the use of the Internet will be required to do the research project. If they do not have access to the Internet at home, they can collect data at the school or public library.

7. Review the list of suggested Internet sites the students can use to find information.
- http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/heat-chaleur-eng.php
- http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/heat-chaleur-eng.php
- www.redcross.ca

8. Tell the students that they will be required to present their research to the class. Encourage them to be colourful and creative in the way they present their findings.

9. Answer any questions.

Duration

- Class time: 30 minutes to introduce the project. Review time will vary. Allow about 5 – 8 minutes per presentation.
- Home time: approx. 60 minutes depending on the teams' involvement in the project.

Material required

- Computer
- Internet
- Activity booklet
- Annex 6: *Heat-vulnerable groups*

Answer key

Answers will vary – refer to annexes 6 and 7.

Being prepared for the heat

Objective of the activity

The objective of the activity is to have the students prepare an extreme heat checklist and present it to their classmates.

Task description

The learning takes place through scenarios. The students team up in groups of four (4). Each group is a consulting firm. As a team, the students have to find solutions for their clients who would like to enjoy being active even though the weather outside is very hot. The students are invited to be creative and imaginative in their projects. They can use the Internet, if available.

Method suggested

1. Introduce the activity by explaining the following:
- Most heat-related illnesses can be prevented;
- Since the weather is forecast in advance, you can be prepared by checking the Environment Canada or Weather Network Web sites;
- It is important to give the body time to get used to the heat (acclimatize);
- Plan ahead if you want to stay cool!

2. Tell the students that they will be preparing an extreme heat kit checklist.

3. Explain to the students that they will be working as a team of consultants to find solutions for their clients who would like to spend the day outside even though the weather is very hot.

4. Explain to the students that they will be working on a scenario.

5. Ask the students to go to Activity 16 in their booklets and read the instructions with them.

6. Assign one of the four scenarios to each team.

7. Hand out copies of Annex 7 to the students, and tell them to use the information to resolve the scenarios. The students may have access to the Internet to come up with some additional ideas if necessary.

8. Tell the students that they will be presenting their answers to their classmates in a role play format where one student plays the customer and the team plays the consultant firm.

9. Allow 20 minutes to complete exercise.

10. Answer any questions.

Review of the activity

1. Ask one volunteer to play the customer.
2. Ask the teams to present their answers while interacting with the customer.
3. Review the answers based on the content presented in Annex 6.
4. Answer any questions.

Duration

Class time: 60 minutes

Material required

- Activity booklet
- Annex 7: *Being prepared for the heat*
- Flip chart papers
- Markers
- Material to do crafts and to draw

Answer key

Answers will vary – refer to annex 7

Other kinds of disasters in Canada

Task description

Through research on the Internet and other media, students read articles about disasters caused by human activity that have happened in Canada

Method suggested

1. Ask students if they know of any disasters that have affected Canada that are not of natural origin. Encourage them to talk about what they know.

2. Have students form pairs and read newspapers, magazines or Internet sites for reports about other kinds of disasters that have occurred in Canada.

3. After they have chosen an article, ask them to read and analyze it, filling out the analysis report form on Sheet 17 of the activity booklet.

4. After the analyses are completed, as a group, invite all teams to share their findings and analysis. Ask each group to choose a spokesperson to present the information entered in the analysis report form.

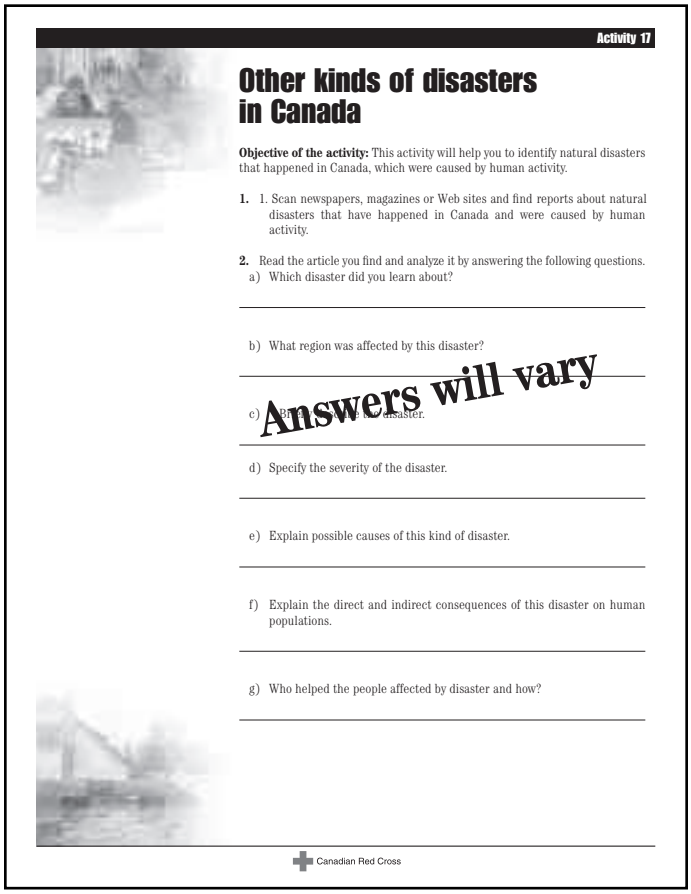
5. Summarize the main points.

6. Answer any questions they may have.

Material required

- Sheet 17 of the activity booklet
- For more information section at the end of the activity booklet

Answer key


Activity 17

Other kinds of disasters in Canada

Objective of the activity: This activity will help you to identify natural disasters that happened in Canada, which were caused by human activity.

1. 1. Scan newspapers, magazines or Web sites and find reports about natural disasters that have happened in Canada and were caused by human activity.

2. Read the article you find and analyze it by answering the following questions.

a) Which disaster did you learn about?

b) What region was affected by this disaster?

Answers will vary

c) [illegible] disaster.

d) Specify the severity of the disaster.

e) Explain possible causes of this kind of disaster.

f) Explain the direct and indirect consequences of this disaster on human populations.

g) Who helped the people affected by disaster and how?

Canadian Red Cross

To be ready for an emergency

Task description

Using the reminder list and the research questions, students learn how to prepare for an emergency (emergency and first aid kits).

Method suggested

1. Have students form pairs. Ask them which objects they should have on hand and the preventive measures needed to intervene in an emergency. Write down their answers on the board. Ask them if they have ever done one of these preparations.

2. Ask them to fill out Sheet 18 to find out more about the preparation of an emergency kit and first aid measures.

3. Once the sheet is filled out, review their answers as a group. This is when it may be useful to bring an emergency kit and a Red Cross first aid kit in class.

4. Suggest that they do research so they can provide more in-depth answers on first aid interventions.

5. Answer any questions they may have.

Material required

- Sheet 18 of the activity booklet
- First aid manual “Vital Link” (optional)

Answer key

Next page

To be ready for an emergency

Objective of the activity: This activity will help you become familiar with the preparedness activities that will help you to act effectively in an emergency situation.

A natural disaster often occurs unexpectedly. To react properly, it is essential that some of your luggage be ready.

1. An emergency kit is luggage that you can prepare ahead of time. In the list of the following objects, check off those that should be part of your emergency kit.

Personal care

- ■ Shampoo
- ■ Facecloth and towel
- ■ Hair brush
- □ Hair dye
- □ Makeup
- ■ Deodorant
- ■ Medication
- ■ Toothbrush
- ■ Toothpaste
- ■ Body soap
- □ Hand and body cream
- □ Hairspray
- □ Perfume
- ■ Personal hygiene items

Clothing

- ■ Socks (cotton, wool)
- ■ Sneakers/runners
- ■ Pants
- ■ Shoes
- ■ Sweaters (wool, heavy cotton)
- ■ Jackets (raincoat, coat)
- ■ Gloves, mittens
- □ Jewellery
- ■ Hat
- ■ Underwear

Foods

- ■ Canned food (vegetables, fruits, stews, beans, etc.)
- □ Bread
- □ Soft drinks
- ■ Dry fruits and vegetables
- ■ Bottled water
- □ Condiments (ketchup, mayonnaise, etc.)
- □ Cake
- ■ Jam, honey, peanut butter, etc.
- □ Milk products (milk, cheese, etc.)
- ■ Pudding
- ■ Crackers and Melba toast
- ■ Cereals
- □ Seasoning (salt, pepper, spices, etc.)
- □ Meat and fish
- ■ Fruit juice
- ■ Pasta
- ■ Hot drinks (coffee, tea, etc.)
- □ Chips
- ■ Nutrition bars

Miscellaneous

- ■ Keys (house, car)
- ■ Flashlight and spare batteries
- ■ Glasses
- ■ Dishes
- □ Music CDs
- ■ Money
- ■ Camp stove with fuel
- ■ Whistle
- ■ Portable radio
- ■ Manual can-opener and bottle opener
- ■ Books
- ■ Red Cross first aid kit
- □ Backpack
- ■ Important documents (identification and personal documents, copy of insurance policy)
- ■ Games
- ■ Heavy blanket

N. B. These lists are not exhaustive.

2. When answering the following questions, evaluate your ability to help.

	TRUE	FALSE
1. 90 % of accidents can be avoided with a minimum of prevention	■	□
2. The first step to follow on the site of an accident is to ensure my own safety.	■	□
3. If I am witness to an accident, it is my civic duty to stop and help.	■	□
4. To ease the pain, I can apply butter or petroleum jelly to a burn.	□	■
5. In case of poisoning, I must ask the victim to drink milk.	□	■
6. To stop a nose bleed, I must tilt the head back.	□	■
7. In case of a fracture, I must reposition the limb in its natural position. .	□	■
8. I must remove shards of glass lodged in a wound.	□	■
9. It is important to find cotton swabs, peroxide and Mercurochrome in a first aid kit.	□	■
10. The majority of deaths after a heart attack occur in the two hours following the appearance of the first symptoms.	■	□
11. I must burst a blister to ease the pain.	□	■
12. One would have to place a hard object in the mouth of an epilepsy patient to prevent him or her from swallowing his or her tongue.	□	■

1) You obtained nine to twelve good answers. Bravo! Any injured person would be in good hands with you. But for added confidence, why not follow a first aid course?

2) You obtained five to eight good answers. You demonstrate a certain ability to help. But enrolling in a first aid course could be beneficial.

3) You obtained one to four good answers. Emergency 911! You should immediately enrol in a first aid course.

Do you have a first aid kit at home? Would you know how to use the material it contains? To get a Red Cross first aid kit or to register for a first aid course, contact your local branch of the Red Cross.

3) In case of an emergency, it may be necessary to call for help. Fill out the telephone list by finding the emergency telephone numbers. Post this reminder near your telephone at home.

a) Emergency 9-1-1 or _____

b) Fire station _____

c) Police station _____

d) Ambulance _____

e) Mother at work _____

f) Father at work _____

g) Another adult (relative, neighbour) _____

Answers will vary

h) Local community health centre _____

i) Family doctor _____

4) Now that you know the telephone numbers to dial for help in case of emergencies, write down the essential information you should give the switchboard operator. Check your answers with your educator.

Risk analysis

Task description

Using a checklist, students identify potential hazards in their bedrooms.

Method suggested

1.Ask students in which room of the house they spend the most time. Ask them if their bedroom is safe.

2. As a group, read the instructions on Sheet 19. Ask them to complete the sheet at home.

3. Once the sheets are filled out, have students bring them back in order to review them. Discuss the “safest room” and the “least safe room”. What changes can be made to increase safety? Remind students of the safety rules for limiting risks and hazards in a bedroom.

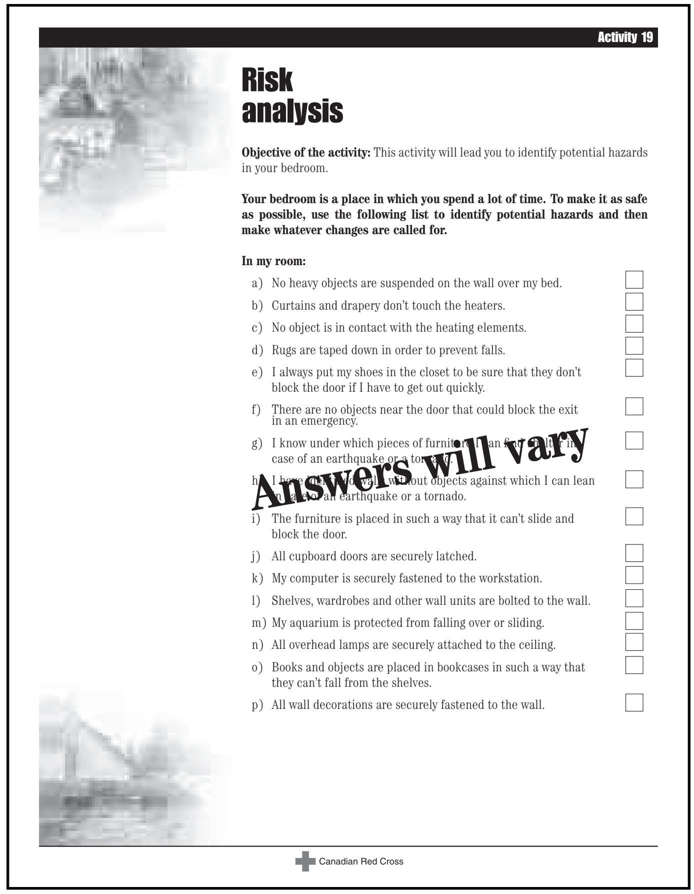
4. Encourage students to think about risks of accidents in other rooms of the house and about disasters that could occur in the area where they live.

5. Answer any questions they may have.

Material required

• Sheet 19 of the activity booklet

Answer key



Activity 19

Risk analysis

Objective of the activity: This activity will lead you to identify potential hazards in your bedroom.

Your bedroom is a place in which you spend a lot of time. To make it as safe as possible, use the following list to identify potential hazards and then make whatever changes are called for.

In my room:

a) No heavy objects are suspended on the wall over my bed.
b) Curtains and drapery don’t touch the heaters.
c) No object is in contact with the heating elements.
d) Rugs are taped down in order to prevent falls.
e) I always put my shoes in the closet to be sure that they don’t block the door if I have to get out quickly.
f) There are no objects near the door that could block the exit in an emergency.
g) I know under which pieces of furniture I can find shelter in case of an earthquake or a tornado.
h) I have identified walls without objects against which I can lean in case of an earthquake or a tornado.
i) The furniture is placed in such a way that it can’t slide and block the door.
j) All cupboard doors are securely latched.
k) My computer is securely fastened to the workstation.
l) Shelves, wardrobes and other wall units are bolted to the wall.
m) My aquarium is protected from falling over or sliding.
n) All overhead lamps are securely attached to the ceiling.
o) Books and objects are placed in bookcases in such a way that they can’t fall from the shelves.
p) All wall decorations are securely fastened to the wall.

Answers will vary

Canadian Red Cross

Your school evacuation plan

30 min.

Task description

Using the school evacuation plan, students learn the instructions and the route to follow to exit the school in case of an emergency

Method suggested

1. Have students form pairs. Ask them if they have ever had to leave the classroom and the school quickly and under what circumstances: when did it occur, what was the reason, how did the teachers and the students react, how did they return to class, etc. Remind them of the circumstances under which they could have to evacuate the school: fire, hazardous materials release, flood, bomb scare, violent act, etc.

2. Suggest that they fill out Sheet 20 to become familiar with the evacuation plan of their school. Give each student a plan of the school and ask them to locate the emergency exits, the fire extinguishers and other emergency material. Using various starting points such as the classroom, cafeteria, gymnasium and other, ask them to identify the various routes to exit their school.

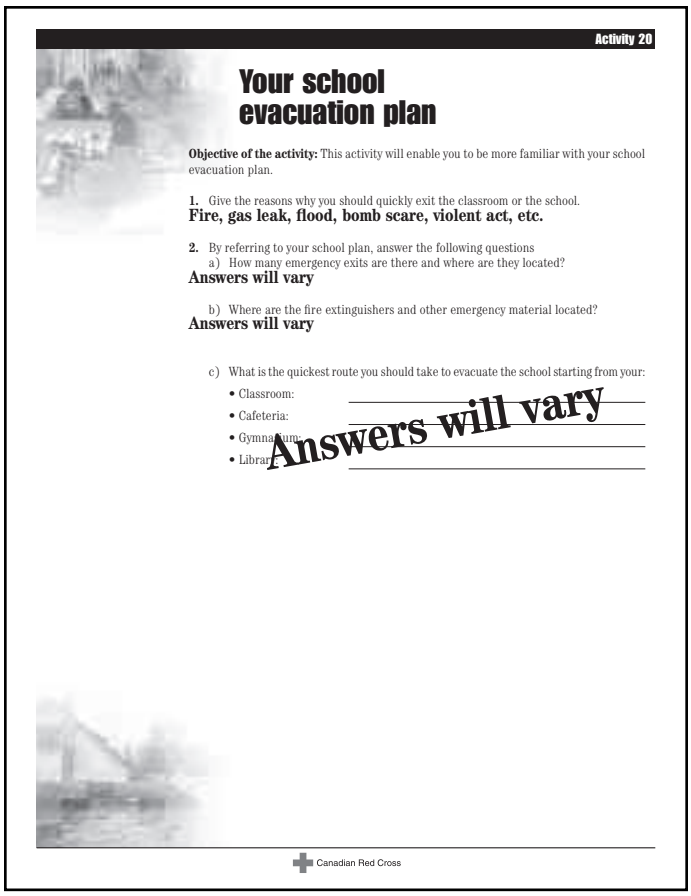
3. Once the sheet is filled out, check their answers as a group. Identify the meeting place for the class outside the school. Practice the school evacuation plan. Comment and give feedback to the students. Suggest that they carry out the same exercise at home to contribute to the safety of their family.

4. Answer any questions they may have.

Material required

- Sheet 20 of the activity booklet
- Photocopies of the school plan for each student
- Annex 8 — Reminder

Answer key



Activity 20

Your school evacuation plan

Objective of the activity: This activity will enable you to be more familiar with your school evacuation plan.

1. Give the reasons why you should quickly exit the classroom or the school.
Fire, gas leak, flood, bomb scare, violent act, etc.

2. By referring to your school plan, answer the following questions
a) How many emergency exits are there and where are they located?
Answers will vary

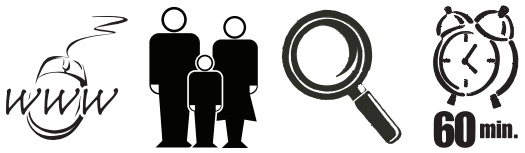
b) Where are the fire extinguishers and other emergency material located?
Answers will vary

c) What is the quickest route you should take to evacuate the school starting from your:
- Classroom:
- Cafeteria:
- Gymnasium:
- Library:

Answers will vary

Canadian Red Cross

The behaviours and attitudes to adopt in emergencies



Task description

Using situations listed on the activity sheet, students describe the behaviours and attitudes to adopt during and after a natural disaster.

Method suggested

1.Have students form groups of four. Ask them to think about the behaviours and attitudes to adopt during a natural disaster. Invite them to visit the youth section, on the Web site of Sécurité publique du Québec, to learn more about this topic.

2. Suggest that they fill out Part 1 of Sheet 21 to find out more about these behaviours and attitudes. Ask them to read the situations and to choose one that presents the best behaviours and attitudes to adopt during a natural disaster. Use the board. Suggest that they name a speaker for the group who will introduce and support the team's choice before the entire class.

3. Once Part 1 of the sheet is filled out, get back together and check their answers. Ask the speaker of each group to introduce the situation that presents the best behaviours and attitudes. Compare each team's choice. Summarize the information on the behaviours and attitudes to adopt during a natural disaster by reading the chart in Annex 8.

4. Ask them to fill out Part 2 of Sheet 21 to find out more about what should be done after a natural disaster. Once this part is filled out, check their answers.

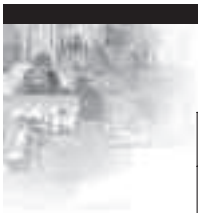
5. Answer any questions they may have.

Material required

- Sheet 21 of the activity booklet
- Photocopy of Annex 8 for each student
- Web site of *Sécurité publique du Québec*, Youth Section at: www.msp.gouv.qc.ca/jeunesse/index_en.html

Answer key

Next page



Natural Disaster	What to do	What Not to Do
a) **Earthquake**	• Seek shelter under a table.	• Run in the house. • Run outside of the house.
b) **Tornado**	• Stop the car.	• Lock the car's doors • Hang on to the car seat.
c) **Lightning Storm**	• Go into the house for shelter. • Close doors and windows. • Disconnect electrical appliances.	• Turn on the computer.
d) **Flood**	• Move valuables to the upper floor of the house. • Remain on the upper floor until everything is back to normal.	

In these situations, which one presents only the proper things to do in case of a natural disaster: **D**

Remember that it is always better to stay **calm** and to avoid using **the telephone.**

Part two

2. To know what you should do after a disaster, determine which of the following statements are true or false. Circle one of the two letters.

1. After a flood, turn on the heating system immediately. T (F)
2. Listen to the radio station. (T) F
3. Keep the food in your refrigerator and freezer so it does not go to waste. T (F)
4. Use the telephone to let someone know your condition. T (F)
5. Turn the lights on immediately. T (F)
6. Check for possible fire hazards. (T) F
7. Help injured people even if you're injured yourself. T (F)
8. After an earthquake, return immediately into your house. T (F)
9. Take the elevator. T (F)
10. Remain where you are and protect yourself during aftershocks. (T) F
11. After an earthquake, use water from the water heater or the toilet bowl if necessary. (T) F
12. After a flood, drink tap water. T (F)
13. After a flood, wash and then sterilize dishes. (T) F
14. Stay close to power lines. T (F)
15. When you evacuate, leave a note of your destination point on the table. (T) F
16. Take your time to evacuate the house. T (F)
17. Lock the doors of your home before leaving. (T) F
18. Use the routes designated by the authorities and avoid shortcuts. (T) F

Myth or fact?

Task description

By matching the myths about natural disasters to the facts, students learn about safe behaviour in emergency situations.

Method suggested

1. Ask students if they know what a myth is. Ask them to give a few examples.

2. Have students form pairs and complete the activity described on Sheet 22 in the activity booklet by matching the myths to the facts.

3. As a group ask them to discuss their findings. Ask each team to choose a spokesperson to report the information noted on the activity sheet.

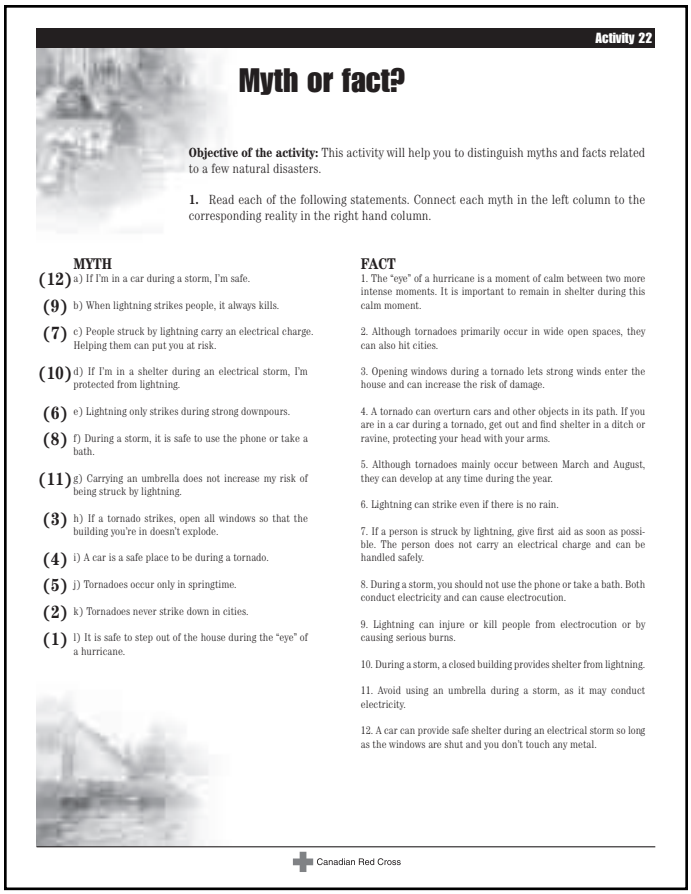
4. Summarize the main points raised by the students, emphasizing safe behaviours to adopt during electrical storms, floods, tornadoes and earthquakes.

5. Answer any questions they may have.

Material required

- Sheet 22 of the activity booklet

Answer key



Activity 22

Myth or fact?

Objective of the activity: This activity will help you to distinguish myths and facts related to a few natural disasters.

1. Read each of the following statements. Connect each myth in the left column to the corresponding reality in the right hand column.

MYTH	FACT
(12) a) If I'm in a car during a storm, I'm safe.	1. The "eye" of a hurricane is a moment of calm between two more intense moments. It is important to remain in shelter during this calm moment.
(9) b) When lightning strikes people, it always kills.	2. Although tornadoes primarily occur in wide open spaces, they can also hit cities.
(7) c) People struck by lightning carry an electrical charge. Helping them can put you at risk.	3. Opening windows during a tornado lets strong winds enter the house and can increase the risk of damage.
(10) d) If I'm in a shelter during an electrical storm, I'm protected from lightning.	4. A tornado can overturn cars and other objects in its path. If you are in a car during a tornado, get out and find shelter in a ditch or ravine, protecting your head with your arms.
(6) e) Lightning only strikes during strong downpours.	5. Although tornadoes mainly occur between March and August, they can develop at any time during the year.
(8) f) During a storm, it is safe to use the phone or take a bath.	6. Lightning can strike even if there is no rain.
(11) g) Carrying an umbrella does not increase my risk of being struck by lightning.	7. If a person is struck by lightning, give first aid as soon as possible. The person does not carry an electrical charge and can be handled safely.
(3) h) If a tornado strikes, open all windows so that the building you're in doesn't explode.	8. During a storm, you should not use the phone or take a bath. Both conduct electricity and can cause electrocution.
(4) i) A car is a safe place to be during a tornado.	9. Lightning can injure or kill people from electrocution or by causing serious burns.
(5) j) Tornadoes occur only in springtime.	10. During a storm, a closed building provides shelter from lightning.
(2) k) Tornadoes never strike down in cities.	11. Avoid using an umbrella during a storm, as it may conduct electricity.
(1) l) It is safe to step out of the house during the "eye" of a hurricane.	12. A car can provide safe shelter during an electrical storm so long as the windows are shut and you don't touch any metal.

Canadian Red Cross

My commitment in case of an emergency

Task description

Students identify the responsibilities that they could assume in an emergency at home

Method suggested

1. Have students form groups of four to five and to specify certain responsibilities they could assume in case of an emergency. Ask them to write down their ideas on Part 1 of Sheet 23. Then ask them to name a spokesperson for their team who will summarize the information during the review in a large group.

2. After about 20 minutes, review the answers as a group. Ask each spokesperson to present and support the ideas stated by the groups. Write the points suggested by the students on the board and ask them to discuss their importance and pertinence. Ask them to individually choose the responsibilities that they consider the most important for their family. Ask them to write them on Part 2 of Sheet 23.

3. Suggest that they bring their commitment plan home to fill in and validate with their parents. Have the document signed by the students and their parents to make the commitment official.

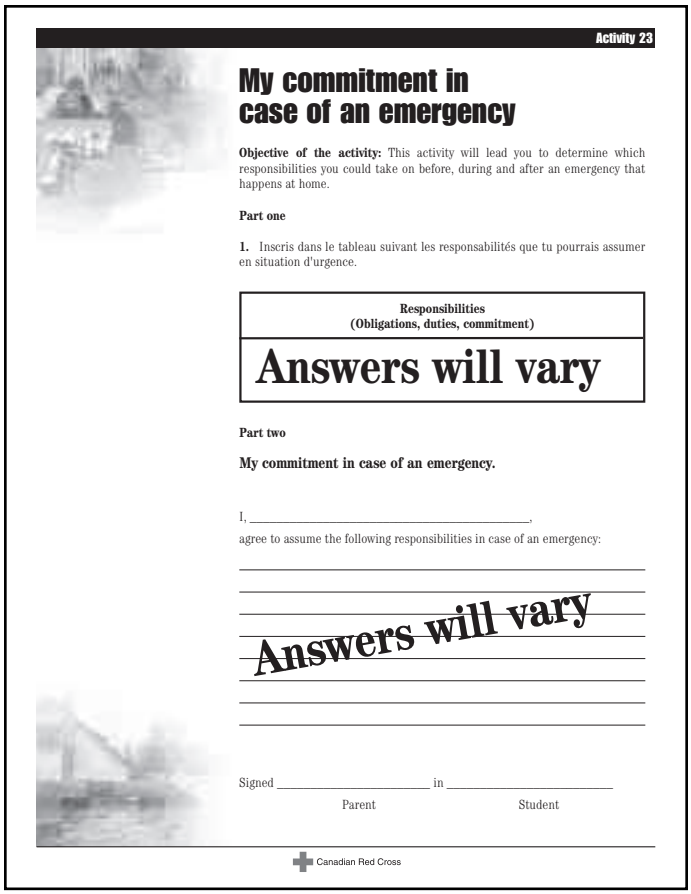
4. Answer any questions students may have.

This activity is designed to make youth aware of their responsibilities and have them take on an active role in an emergency. However, it is important to ensure that the parents' responsibilities are not transferred to the children. Explain to students that this activity aims to limit oversights and panic. It is important to avoid youth being blamed when implementing the emergency plan.

Material required

- Sheet 23 of the activity booklet

Answer key



Activity 23

My commitment in case of an emergency

Objective of the activity: This activity will lead you to determine which responsibilities you could take on before, during and after an emergency that happens at home.

Part one

1. Inscris dans le tableau suivant les responsabilités que tu pourrais assumer en situation d'urgence.

Responsibilities (Obligations, duties, commitment)
Answers will vary

Part two

My commitment in case of an emergency.

I, _____,

agree to assume the following responsibilities in case of an emergency:

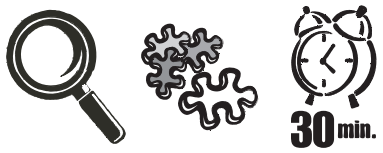
Answers will vary

Signed _____ in _____

Parent Student

Canadian Red Cross

A well-orchestrated response



Task description

Students take part in a simulation to learn about the planning and decision-making processes that occur before, during and after a hurricane.

Method suggested

1. Ask students to describe what happens when a hurricane hits a community. Invite them to name the various parties that have to be ready to respond before, during and after the disaster.

2. Have students form pairs and read Sheet 24 in the activity booklet. As a group, discuss the various roles presented in the sheet and the challenges that confront the parties in the emergency operation. Assign one role to each team and hand out the corresponding ID card. Give students a few minutes to share and take notes on the responsibilities related to their role during a hurricane.

3. When teams are ready, have them place their desks in a circle and put their ID cards in full view.

4. Hand out Annex 9. Ask them to read it and to prioritize the problems affecting the city and the emergency response teams as the situation evolves.

5. Ask each team to write down in the *Emergency response journal* the problems to be solved, the actions to be taken at each step and the parties involved. Remind them that they don't have much time because the population urgently needs their help!

6. Following the simulation, have students review their notes and analyze their responses. Which problems were the most difficult to resolve? Which decisions were the most difficult to make?

7. Summarize the information.

8. Answer any questions they may have.

Material required

- Sheet 24 of the activity booklet
- Photocopy of Annex 9 for each student – *Emergency response and recovery scenario*
- Sample *Emergency response journal*

Emergency response journal

Date _____

Time	Problem encountered	Actions taken	Involved parties

For more information

In the fourth part of the facilitator's guide, there is information on the main natural disasters that could occur in your province or in other parts of Canada, the measures to take to be well prepared for emergencies and the observable reactions students have in case of an emergency.

A natural disaster is a sudden event that threatens the life, health and living conditions of a community. They surpass the normal capacity of community institutions and individuals to deal with the situation. Therefore, an event or a fire becomes a disaster when:

- It involves an extreme phenomenon;
- The event occurs unexpectedly;
- The phenomenon affects a large number of people.

Types of disasters
Disasters can be caused by nature or by human activity.

A natural disaster is caused by natural elements such as wind, rain, extreme temperatures or seismic activity, which become catastrophic by causing deaths, injuries and material damage. There are two types of natural disasters:

- Weather or climate-related disasters: storm (freezing rain, rainstorm, hurricane and tornado), heat or cold wave, drought, flood.
- Geological disasters: earthquake, landslide and tsunami.

Disasters deriving from human activity are catastrophes whose source is not natural. There are many types, including:

- Biological disasters: epidemic, infestation.
- Industrial or environmental accidents: fire, explosion, transportation accident (in the air, on earth or at sea), pollution, failure of civil engineering structures, etc.
- Armed conflicts: terrorism, civil war, etc.

Types of natural disasters
There are three types of natural disasters:

- Weather-related disasters: storms (hurricanes, tornadoes, cyclones, snowstorms) heat or cold waves, droughts, etc.
- Topographical disasters: floods, avalanches, landslides, etc.
- Geophysical disasters: earthquakes, volcanic eruptions, tidal waves, etc.

A few natural disasters

Many natural disasters can lead to major damage when they occur close to residential areas. This section of the teaching guide provides a short list of these disasters.

Lightning storms and lightning bolts
Lightning storms consist of lightning flashes (light) and thunder (bang). Lightning can smash windows, start a fire, cause power failures or explosions if it comes into contact with fuel. It can be dangerous to humans by causing serious burns or electrocution. This natural phenomenon occurs mostly in the summer, late in the afternoon.

Vertical air currents that carry humidity, water and ice in the clouds create electrical charges. Clouds then develop positive and negative charges. When these charges are too high, there is an electrical discharge. Discharges occur either between clouds to produce heat lightning or on touching the ground to produce a lightning bolt that may strike the same place several times. Astonishingly, lightning can also occur during a snowstorm.

A lightning bolt produces a tremendous amount of energy. It can reach temperatures up to five times that at the surface of the sun. If it strikes a tree, the electrical current reaches the water in the wood and changes it into steam which shatters the tree. This discharge usually occurs at only one point in the lightning bolt.

During a storm, you first see the flash of lightning and then hear the thunder. This can be explained by the fact that light travels one million times faster than sound. You can measure the distance of a storm by counting the number of seconds between the time you see the flash of lightning and the time you hear the thunder. You then divide the time by 3 and you get the distance of the storm in kilometres.

Power failures
Here are possible causes of power failures:

- Natural: Lightning bolts, freezing rain, frozen electrical wires, storms and trees that fall on power lines.
- Technical: Electrical power failure or breakdown.
- Human: Overloads, short-circuits, power cut-offs, person who brings an aluminum ladder or a metal antenna close to electrical wires, excavation work.

What to do in case of a prolonged power failure?
In case of a power failure, you should first determine how extensive it is (a few houses, one entire street, a neighbourhood) and notify your electricity company to help them locate the failure. With their computers, they usually can quickly find the failures in a network because of the sudden lowered electricity demand.

If the power failure lasts, you should:

1. Listen to the radio station to know more about the failure;
2. Lower the thermostat so as not to overload the network when the power comes back on;
3. Disconnect electrical appliances that were in operation before the power failure, except for the refrigerator and freezer;
4. Leave a few lights on to know when the power comes back on;
5. Avoid opening the refrigerator and freezer: food can be kept for 24 to 48 hours. In winter, some food can be kept outside or along the windows;
6. Close water valves and open water faucets when you leave your home;
7. Avoid using the elevator after the electricity has come back.

When the power comes back on, you must gradually reconnect your electrical appliances and turn on the heating progressively to avoid overloading the circuit and causing other failures.

Changing your habits temporarily
It is important to remember that people's habits completely change during a power failure. Everyday life changes altogether. It becomes more difficult to cook, heat the house, provide lighting and carry out activities.

Heavy rains (or torrential rains)
Clouds are a collection of very small water droplets. Carried by the wind, they stick together and form larger droplets. When their size is greater than 0.1 mm, they fall as rain. Heavy rains last for a long period of time, accumulate and fall at a rate of about 7.6 mm per hour. If they are heavy enough, they can cause localized or generalized floods. There are different types of rain. Here are a few:

- Drizzle: precipitation consisting of many droplets falling lightly (less than 0,5 mm).
- Shower: strong and sudden precipitation of a short length.

Earthquakes
Earthquakes or seismic activity are sudden movements of the Earth's crust. The tremors usually occur suddenly and leave very little time to react. It is impossible to prevent or forecast earthquakes. A tremor that registers less than 3.5 on the Richter scale usually goes unnoticed. Tremors that have a magnitude of 5.5 to 6 can cause moderate damage to neighbouring buildings. When the earth trembles at a magnitude of 7 or more, it is considered a major earthquake that can cause large-scale damage.

Floods
In Canada, floods are natural disasters that cause the most material damage. Floods are the overflow of rivers and lakes caused by an excessive rise of the water level. This rise can be caused by heavy precipitation, sudden thawing of snow, ice jams or ice breakups.

Snowstorms
This natural phenomenon is characterized by abundant snowfall and strong winds. Visibility is thereby reduced and it becomes hard to walk or travel outside. Thus, it is better to stay at home. Schools are usually closed and traffic on the highways is limited.

During a snowstorm, the air temperature is usually higher because snowfalls are more abundant when the temperature is slightly below 0 °C.

Snowstorms are most common in December, January, February and March. It does not snow everywhere in the world. In some countries, the snow falls only at the top of high mountains. In other countries, there is never any snow. At the North Pole and the South Pole, the snow never melts.

Freezing rain
Freezing rain is caused by raindrops freezing upon impact on earth or on an object. It then forms a layer of ice. The thickness of the ice depends on the amount of time the freezing rain lasts and on its intensity. When ice accumulates on electrical wires it can result in severe damage and large-scale power failures. In addition to damaging trees and houses, freezing rain also makes it dangerous to travel.

Hail
Hail is precipitation consisting of ice particles that are formed during a storm and can impact the ground at speeds of 130 km/hour. Hailstones can sometimes measure more than 10 centimetres, that is, the size of a grapefruit. Hail can cause severe damage to crops, houses and vehicles. It can also wound people and animals.

Tornadoes
Tornadoes are whirlwinds shaped like a funnel that points towards the ground. They can destroy everything in their path. This type of phenomenon can uproot trees, turn cars over and tear the roofs off houses.

Forest fires
Most fires that destroy our forests are caused by human negligence, campfires that are not properly put out, or a cigarette tossed by a hiker, for example. However, fires that occur naturally, such as those caused by lightning bolts, are more devastating and burn over larger areas. Forest fires progress very rapidly, especially when it is windy and the weather is dry. In Canada, there are about 9,000 forest fires every year.

Landslides
Landslides are movements of clay type soil saturated with water. These ground movements occur very rapidly and leave people very little time to react. Risks associated with landslides come from the impact of rapidly moving debris or from the ground caving in.

Volcanic eruptions
Volcanoes can be understood as the Earth's chimneys that allow for magma to be released. You can easily conclude that there are no volcanoes in Canada but in fact, there are many dormant volcanoes in Western Canada. Therefore, the possibility of a volcanic eruption still exists.

Tsunamis
Tsunamis or tidal waves are huge ocean waves caused by an undersea disturbance such as underwater volcanoes, earthquakes and landslides. These waves can reach up to 30 metres high and cause major damage to houses along the shores.

Hurricanes
Hurricanes are huge tropical storms that can cause great damage. They are also called "tropical cyclones" or "typhoons". They originate in the ocean, usually near the equator. Violent winds and heavy rains accompany them.

Extreme heat or cold waves
Climate change causes extreme meteorological phenomena such as extreme heat and cold waves. These events flow from the development of a mass of hot or cold air that provokes a sharp increase or decrease in temperatures. Heat or cold waves can be devastating for people's health, especially those who are vulnerable, such as young children or older individuals.

Fire
It is important to be aware that a fire can start anywhere in the house. However, bedrooms, kitchens or living rooms are more subject to fire. It can also start in the basement.

The causes of fires are varied. They can be caused by human error or mechanical failures. Most fires start in the kitchen, usually when cooking oil is overheated. Other causes are: heating devices, negligent smokers, children playing with matches, fires lit voluntarily, electrical fires and clothes dryer fires.

Firefighters are constantly carrying out prevention work and suggest being careful to avoid fires. Over the last few years, it has been highly recommended and in some cases compulsory to have smoke detectors in each home. This prevention device is essential to warn the occupants that there is smoke in the house.

To make sure the smoke detector is in good working condition:
- Check it each month to make sure it works properly;
- Replace the batteries twice a year, at fall and spring time changes;
- Be more careful when the smoke detector is connected to the home power supply, especially when there is a power failure;
- Install the smoke detector close to the bedrooms;
- Install one smoke detector on each floor.

It is essential to know how to react in case of a fire or simply when to evacuate your home. You must:
- Remain calm;
- Avoid panicking;
- Yell out to alert your neighbours;
- Leave your home quickly;
- Not get dressed or take your toys along;
- Not try to put out the fire;
- Move on hands and knees to escape if there is smoke; but avoid crawling as some toxic gases that are heavier than air linger close to the ground;
- Avoid touching any doors;
- Close the doors to avoid any drafts;
- Call emergency services;
- Get help from your neighbours;
- Go to the designated meeting place;
- Do not go back into the house.

Remind children they must not hide (under the bed or the covers, in the closet, in the clothes dryer, in the bathtub) when they detect a fire at home, because they will not be safe there. The best reaction is to alert other people in the home, then go outside to be visible, breathe fresh air and yell for help.

Hazardous materials releases

Hazardous materials releases are incidents that involve an accidental spill or leak of hazardous chemical products that are dangerous to humans and the environment.

These hazardous products can contaminate the soil or water or can spread in the air. If they become airborne, they may or may not be visible as a toxic cloud. Sometimes, you can smell or taste the hazardous product. Inhaling toxic fumes or drinking contaminated water can be hazardous to your health. The risk depends on the toxicity of the substance in question, its concentration and how long you're exposed to it.

In case of a hazardous materials release, the authorities may ask that you remain inside your home and use Shelter-in-Place techniques:
- Go inside your home and remain there;
- Close all windows and doors;
- Turn off all ventilation systems;
- Listen to the radio or watch television to be aware of the authorities' instructions.

Natural disasters and climate change

Extreme meteorological events such as violent rainstorms, tornadoes and hurricanes are all part of nature. However, over the past 30 years, these phenomena have become more frequent and more importantly, carry greater intensity. They have tragic effects on all peoples of the world.

Why are natural disasters more frequent and causing more damage to materials and humans?
In fact, it is thought that the increase in natural disasters is caused by a phenomenon that has been observed over the years: the increased temperature of the Earth's surface. Human activity is considered to be partly responsible for this global warming. Through the emission of "greenhouse gases", human activity enhances the natural greenhouse effect on the planet.

What is the natural greenhouse effect?
The Earth is like a huge greenhouse. The planet is surrounded by a layer of air called the atmosphere, which is made up of a mixture of gases. These gases, by trapping the sun's heat, help keep the Earth warm, which is why we call them "greenhouse gases". They also act as a thermostat by protecting the Earth from wide variations in temperature. Without these gases, all of the sun's heat would escape in space and life would not be possible.

What are greenhouse gases?
Nitrogen, oxygen, water vapour, carbon dioxide (CO_2) and methane (CH_4) are natural greenhouse gases that can be found in the atmosphere. In normal amounts, they trap enough heat to warm the Earth just as it needs to be. But when gases are present in large quantities, they trap more heat and reflect it back on the Earth. Then the temperature increases and creates global warming.

How do human activities increase greenhouse gases?
It is mainly through burning what are called "fossil fuels" that human beings contribute to increasing the concentration of greenhouse gases in the atmosphere. Oil, gas and coal are examples of fossil fuels. They are used to drive our cars, heat our homes and operate our mills and plants. Over the past 150 years, greenhouse gas emissions caused by human activities have accumulated in the atmosphere. In Canada, they have increased by 26% between 1990 and 2007.

What will be the consequences of global warming on natural disasters around the world?
Forecasts estimate that the Earth's temperature will increase from 1.8 to 4.0 degrees Celsius over this century. Scientists believe that this increase could reach up to 8 degrees, especially in the northernmost parts of Canada and Alaska.

Warmer temperatures will cause many climate changes. For example, the melting of the Arctic ice cap will increase sea levels. All over the world, floods and erosion will threaten people who live near coastal areas. Some islands may even be wiped out. The increased evaporation of ocean waters will cause a greater number of hurricanes, cyclones and tropical storms.

The interior of continents or countries will experience more frequent droughts and the danger of forest fires will increase because of drier climates. Evaporation and changes in precipitation will mean that water sources will no longer meet the needs of the population in some places. Some regions of the globe will be exposed to more food shortages and famines. Finally, tropical diseases such as malaria will increasingly threaten more vulnerable populations.

What will be the consequences of global warming on natural disasters in Canada?
Because Canada is a country that is located at high latitude, temperature increases will be larger. Increases in temperature will vary in the country overall and warming will be greater in some regions, namely in the North and in the Central and Southern Prairies.

Warmer temperatures will also cause a significant rise in extreme meteorological phenomena such as hurricanes, tornadoes, torrential rains resulting in floods, blizzards, snowstorms, hail and freezing rain.

Higher temperatures will augment water evaporation and, in Southern Ontario, some communities could face water shortages. The Atlantic provinces could be affected by more hurricanes and flooding from rising sea levels. Droughts will be more frequent in the Prairies. Because of dry and warm temperatures, there will be more risks of forest fires. The danger of floods will be more significant throughout the year as a result of more frequent, heavy rainfall.

In addition, there will be more frequent and intense heat waves; they could cause many deaths, especially among older people and young children.

For more information on climate change in relation to natural disasters, please visit the Government of Canada Web site at www.ecoaction.gc.ca or the Red Cross / Red Crescent Climate Centre Web site at www.climatecentre.org.

To prepare for emergencies

Nature's sudden mood swings can strike at any moment without warning. Prevention and preparation for such events can help us to better react and to limit the damage. The following steps are required to plan for the unexpected. Use them to encourage students to be prepared.

- Analyze and study the risk of disasters in your area and help them learn what to do should they occur.
- Teach them to prepare their homes for disasters.
- Teach them to prepare a survival kit, a first aid kit and a car emergency kit with their families.
- They should have enough food and water to last them and their families at least 72 hours in case of an emergency.
- They should make an action plan with their parents:
  - Make a list of all emergency and telephone numbers, and keep it close at hand;
  - Plan on two meeting places ahead of time in case an evacuation is necessary (one that is close to their house in case of a sudden emergency like a fire; another one outside their neighbourhood in case they cannot return home right away);
  - Make sure each family member knows the phone number of someone who lives out of town in case they get separated;
  - Arrange for other places where they could stay temporarily (with other family or friends for example);
- Practice their evacuation plan at home and techniques to remain sheltered in their homes in case there are hazardous materials released.
- Teach them to recognize emergency exits and smoke detectors at home, in school and public places.
- Never use the elevator in case of an emergency.
- Take a Red Cross first aid course.

After the disaster

Even after the disaster, there is still an emergency. You must:

- Give first aid to injured people;
- Be sure to have your survival kit with you;
- Listen to the local radio station in case you are asked to evacuate.

If asked to evacuate, I am ready!

If the authorities give orders to evacuate, do not insist on staying in the house, but instead leave immediately while taking care to:

- Bring along an emergency kit and a first aid kit;
- Wear proper clothing;
- Make sure your pets are safe;
- Leave a note on the table indicating the time of departure and the destination;
- Lock all the doors while leaving.

Cooperate

- Listen carefully to the instructions given by the authorities and rescuers;
- Always follow the route which has been laid out for you;
- Go to the meeting place designated by the authorities;
- Observe what is around you and notify the authorities and people about anything that may seem abnormal or dangerous.

Returning home

When you return home, you must:

- Check the condition of the house to evaluate the damage;
- Use a flashlight to inspect the site: it may be hazardous to turn on the lights;
- Check the condition of your electrical appliances;
- Get in touch with specialists for any electrical, heating or gas problems;
- Drink bottled water until the authorities confirm that the tap water is safe to drink;
- Check the food in your refrigerator and freezer, throw out all spoiled food or other;
- Use the phone only for emergencies: the work teams may still need the telephone circuits for awhile.

Youth and emergencies

Research shows that disasters have a long-term impact on young people. They are especially vulnerable. After an emergency, their reactions can be different according to their age. To help youth cope better, try to make them feel confident and secure and help them understand and perceive what is happening. We now know that youth who participated in risk awareness programs are more equipped to face disasters than youth who did not participate in such programs.

Their reactions are normal

After an emergency, young people may have certain reactions: they may cry, worry, be confused, withdraw or be aggressive. This expression of their anguish is only normal and temporary. It is better not to dismiss their fears because their reactions may persist. You should try rather to understand them and help them to alleviate their fears.

You can help them

After an emergency, you can help the children get back to normal life by explaining to them what happened, taking their fears seriously, listening to what they have to say, being patient with them and encouraging them to express their feelings.

Other sources of information

To complement the information or for more in-depth facts, here is a list of resources to refer to:

- www.redcross.ca
- www.redcross.ca/facingfear
- www.redcross.ca/bugout
- www.climatecentre.org
- www.ifrc.org/what/disasters
- www.iclr.org/index.htm
- www.ecoaction.gc.ca
- www.publicsafety.gc.ca/res/em/nh/index-eng.aspx
- www.nrcan.gc.ca/studelev/index-eng.php
- http://earthquakescanada.nrcan.gc.ca/index-eng.php
- http://ec.gc.ca/default.asp?lang=En&n=8B2F9F48-1
- www.msp.gouv.qc.ca/jeunesse/index_en.html
- www.sopfeu.qc.ca/en/zone_interactive/jeunesse.php
- http://feu.scf.rncan.gc.ca
- http://climatechangenorth.ca/section-BG/B2_Intermediate_Outline.html
- www.fema.gov/kids/index.htm (English only)
- http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/heat-chaleur-eng.php
- http://www.hc-sc.gc.ca/ewh-semt/climat/adapt/heat-chaleur-eng.php

More activities

Observe and learn to distinguish the different types of clouds.

Identify potential earthquake hazards in the classroom based on the following questions:

- Are tables and desks placed in such a way that they cannot slide and block exits?
- Are all filing cabinets and cupboard doors securely latched?
- Are all computers securely fastened to their work stations?
- Are all shelves, filing cabinets and cupboards bolted to the wall?
- Are all overhead lamps securely fastened to the ceiling?
- Are potentially hazardous chemical products safely stored?
- Are chemical products stored in ventilated areas located far from exits?
- Are books and materials stored on shelves in such a way that they cannot fall from them?
- Are all decorations on the wall securely fastened?
- Are glass display cases and aquariums protected against spillage or falling over?

Organize a campaign in your school or community to raise awareness and provide information about natural disasters.

Invite a guest speaker to talk about local or overseas disaster intervention.

Play a game that consists of collectively preparing an emergency survival kit using coloured stickers on which youth write what they think should be included. Each student posts his or her sticker on the board.

Association game with various colored cards: disasters, definitions and appropriate behaviours.

Lead a timed simulation of an earthquake or other emergency situation: two minutes to prepare, simulation in teams and discussion.

The International Red Cross and Red Crescent Movement

The International Red Cross and Red Crescent Movement is the world's largest humanitarian network and is active in 187 countries. Its emblem is a red cross on a white background. In many Islamic countries the red crescent is used instead of the red cross.

History of the Movement

The movement was born in 1859 when a young Swiss, Henry Dunant, witnessed the bloody battle at Solferino, Italy, which saw the Imperial Austrian Army and troops of the Franco-Sardinian alliance fighting one another. Forty thousand men lay on the field, dead or in agony. And there was no one to care for the wounded.

Dunant organized the local community to bandage wounds, and feed and comfort the soldiers. Upon his return, he called for the creation of national rescue societies that would bring assistance to those wounded in war and lay the foundation for the future Geneva Conventions.

The Red Cross was born in 1863 with the creation of the International Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, which would then become the International Committee of the Red Cross. Its emblem was a red cross on a white background — the reverse of the Swiss flag. The following year, 12 governments adopted the first Geneva Convention, a crucial step in the history of humanity since this convention provided for care for the wounded and defined medical services as "neutral" on the battlefield.

Members of the Movement

International Committee of the Red Cross

- This is a neutral, impartial and independent organization.
- The ICRC mainly intervenes in times of conflict.
- The ICRC's mission is to protect life and dignity of victims of war and internal violence (the wounded, the sick, political and civilian prisoners) and provide them with assistance.
- It tries to prevent suffering by promoting right and humanitarian principles.

The International Federation of Red Cross and Red Crescent Societies

- The Federation dispenses its aid without distinction with regard to nationality, race, religion, class or political opinions.
- The Federation conducts rescue operations to help disaster victims.
- The Federation's mission is to improve living conditions for the vulnerable by mobilizing the power of humanity.
- Its work is focused on four fundamental areas: the promotion of humanitarian values; disaster relief; disaster preparedness; and health and assistance to individuals on a community level.

The national Societies

- The national Societies are the incarnation of the Movement's work and principles in 187 countries.
- The national Societies act as support to the government authorities in their countries.
- The various Red Cross societies provide relief services in the event of disaster; social and health programs; and assistance to individuals affected by war.
- The national Red Cross and Red Crescent societies include over 97 million members and volunteers worldwide.

CLIMATE CHANGE IS ALREADY HAPPENING

Because of climate change due to the greenhouse effect, natural disasters will be more frequent

Scientists agree that climate change is here to stay (*Climate Centre*). Climate change is the weather, including temperature changes, over the long term. It's important to understand why climate change is happening, what the effects are, and then to get involved in this important issue.

Why is climate change happening? Scientists tend to agree that human activities are making the planet warmer. Greenhouse gases are emitted when we burn fossil fuels such as oil or gas, or when we cut down and burn trees. An example of a greenhouse gas is carbon dioxide. These gases create a blanket over the Earth, trapping heat and keeping it warmer.

In the past century, the Earth has warmed by 0.7 °C. This makes the last 100 years the warmest period in the last 1,300 years. Is that small temperature increase really a problem? That 0.7 °C may not seem like much. It is, for instance, less than the temperature difference between nightime and daytime in many parts of the world.

To understand if small temperature increases are a problem, think about a person with a fever. Their higher temperature indicates an underlying problem. This is the same for our planet.

With climate change, it is not just the planet's temperature increasing that is a problem. With the temperature change also comes the associated issues such as: increased disasters, melting of glaciers and sea level rise in some areas, droughts in others, increase in spread of diseases and the need for people to move or migrate.

It is estimated that there will be an increase in temperature between 1.8 °C and 4 °C by the year 2099. So is this climate change a big deal? The simple answer is "yes", a lot of people will be affected by this temperature change and its effects.

Effects in the next century due to climate change, include:

- An increase in intensity and frequency of storms, droughts, floods, forest fires, hurricanes and heat waves.
- Sea levels will rise by 28 to 43 centimetres, and water will cover land near coastlines. People living in cities like London, New York and Tokyo, as well as people living on islands and coastlines, will be affected as the water rises.
- The amount of fresh water will be reduced, leaving millions of people thirsty, particularly in Africa and the Mediterranean.
- In some parts of the world, people may not have enough to eat because they cannot grow the food that they need. This will affect areas in Africa the worst, because of higher temperatures and less water.
- More people can become sick because of diseases that spread easily in warmer temperatures. Also, the increased heat can affect people's health, and injuries can result from natural disasters.
- People may need to move to other places as it gets hotter where they live. They may need to move because of a disaster, or the sea rising, having less drinking water or food, or to avoid health problems.

The good news is that we can do things every day that may reduce climate change. Some simple actions are biking instead of driving, growing plants and trees, recycling, and using renewable energy, which all reduce greenhouse gases.

People can learn to deal with changes in the climate if they understand what could happen and to prepare for it.

If you want to learn more on what actions you can take to reduce the human impact of climate change, please visit: http://www.climatecentre.org/site/youth

Reference: *Red Cross/Red Crescent Climate Change Guide*. Available at: http://www.climatecentre.org/

Newspaper Article

Extreme heat hits our community
The Daily Herald News

Written by April Schauer

The first extreme heat event of the year is hitting our community this week and the regional public health unit said that everyone is at risk and should modify their behaviour and stay cool and hydrated. Particularly those most vulnerable to the heat — infants, the elderly and people with chronic diseases — should take extra precautions to stay cool or may need help from family and friends to stay safe.

The hot and humid weather is expected to hit the province on Thursday and continue into the weekend. We are not the only ones who will be faced with the record-breaking temperatures as extreme heat is also expected in several neighbouring communities.

Environment Canada meteorologists said that the extreme heat event expected this week could be life threatening as temperatures will be higher than normal for this time of year and people are typically not prepared and acclimatized.

If the temperature does hit over 32ºC, public health officials will call a heat alert. Staying hydrated and limiting strenuous exercise will help minimize the heat's effect and will help maintain a normal body temperature (approximately 37ºC/ 98.6ºF). "It is also important to visit those most vulnerable during such an event", the Medical Office of Health said.

Defining an extreme heat event
Extreme heat events, more commonly known as "heat waves", can negatively affect your health. Although there is no precise definition, it usually refers to unusually hot weather compared to the regional average for that time period.

History of extreme heat events
Extreme heat events are not new to Canada. Parts of Canada experience hot weather every summer. The highest humidex reading in Canada was 53.0 in Carman, Manitoba, on July 25, 2007. The previous record was in Windsor, Ontario, in 1953 at 52.1. The highest temperature recorded was 45.0ºC in Midale and Yellowgrass, Saskatchewan, in July 1937.

According to the Canadian Disaster Database, five significant extreme heat events were reported in Canada between 1900 and 2005 (1912, 1936, 1953, 1963, 1988), causing just over 1,200 deaths. Many of these deaths were from people drowning in an attempt to cool off. However, research has shown that the impact of extreme heat on Canada is likely under-reported. In Toronto alone, an average of 120 deaths from extreme heat occur annually.

Internationally, there have been several recent devastating extreme heat events. In the summer of 1995, Chicago experienced seven days of extreme heat contributing to 739 excess deaths. In the summer of 2003, Europe was hit with two extreme heat events that caused over 70,000 deaths, by far the largest extreme heat event disaster ever reported.

Climate change and extreme Heat
Understanding the changes to our climate and its effects on human health is critical to help Canadians be better prepared. Research from Environment Canada concludes that for some regions of the country, the number of hot summer days is expected to increase greatly. Since hot weather can lead to health problems, including heat-related illnesses and even death, the increased projection of heat will likely result in a greater impact on our communities if we don't implement effective adaptations. Canadian and international researchers are investing in understanding these issues and how to better prepare ourselves and protect the health of Canadians.

Forecasting extreme heat events
Many extreme heat events can be forecast far enough in advance for public health and emergency management officials and the public to prepare and respond to these dangerous conditions. In order to provide us with a weather forecast, Environment Canada collects weather data and observations from hundreds of weather observation sites across Canada and the United States, as well as from satellite and radar installations. This information is then analyzed by state-of-the-art computers and by expert meteorologists to produce daily weather forecasts that the public can use to get prepared and modify their plans according to the weather. If any severe weather is on the way, a weather warning is issued for that particular region. For more information, visit the Meteorological Services of Canada Web site at www.weatheroffice.ec.gc.ca.

Heat and the body

Mechanisms that heat and cool your body
The human body has a core temperature of approximately 37°C/98.6°F. Each individual's core temperature can vary slightly. In order to maintain a normal body temperature, the body must absorb and dissipate heat. This process is called thermoregulation.

Your body produces its own heat, especially during physical activity. Hot air and exposure to direct sun rays or hot surfaces further heat your body. This heat is lost by contact with cool surfaces or cool air and is aided by sweat production, which cools your body as it evaporates. The weather conditions play a big role in how your body regulates its temperature. For example, if it's windy, sweat is evaporated faster, which increases comfort and cooling of your body. However, high humidity slows down this evaporative process as the air becomes saturated with water vapour, decreasing the rate at which sweat can be absorbed from the skin. Thus, thermoregulation is dependent on four key mechanisms:

- **Evaporative cooling**: is the evaporation of water from the skin (sweat) and the respiratory passages (breathing) to cool the body. It is the most critical cooling mechanism at high temperature because it always results in body heat loss and never in heat gain. Wind speed or air movement can increase evaporative cooling and provide relief in a hot environment.
- **Convection**: the transfer of heat from a warm object toward a cooler object, such as the release of body heat to the cooler air. When the air is cooler than the skin temperature, heat can be lost through convection.
- **Conduction**: the transfer of heat by direct physical contact, such as holding an ice cube; the body will transfer its heat to the cold object (ice cube) and melt it. Heat is either gained or lost through direct transfer by surface contact depending on skin and the objects' temperature.
- **Radiation**: the transfer of infrared waves emitted from one object and absorbed by another. The exchange of heat by radiation depends on a person's surface area, surface temperature, clothing and the temperature of the environment. Radiant heat could be generated by a number of sources, such as direct sunlight. The body may also radiate heat to assist in cooling, if surrounding surfaces are cooler.

Heat-related illnesses

Emergency heat-related illnesses		
Type of illness	**Signs and symptoms**	**What to do**
Heat exhaustion (Include picture)	Can be caused by losing too much water and salt from your body (e.g. excessive sweating without hydration). Symptoms include heavy sweating, weakness, fatigue or tiredness, dizziness or fainting, nausea or vomiting, extreme thirst and quick breathing.	Get help from an adult. Bring the person to a cool place (e.g. an air conditioned area). Have the person rest. Have the person loosen any tight clothing. Give him/her sips of water. Put cool water directly on his/her skin by using a cloth. Also fan him/her.
Heatstroke (Include picture)	The most severe form of heat illness, which can be life threatening as the body loses its ability to manage its own temperature. Symptoms include temperature of 40.6°C or higher, severe headache, decreased responsiveness to simple questions and loss of consciousness.	Get help from an adult. Call 911 or your local emergency number. Have the person rest in a cool place (e.g. an air conditioned area). Remove the person's extra clothing. Spray or splash the person with cool water and fan him/her. Put ice packs in the groin, armpit and back of the neck. If the person becomes unconscious, do not try to give him/her water.

Non-emergency heat-related illnesses		
Name of illness	**Signs and symptoms**	**What to do**
Heat cramps	Most often occurs as a result of heavy sweating such as during or after you have been running, playing sports or doing something that makes you tired on a really hot day. Symptoms include sharp muscle pain in the legs, arms or stomach area. The pain from cramps is caused by not replacing salt lost from heavy sweating.	Get help from an adult. Take the person to a cool place (e.g. an air conditioned area). Let the person rest and give him/her water. Massage and stretch the muscle or the area where the person says he/she has pain.
Heat edema	Can occur when you sit or stand for a long time, especially in extreme heat. Symptoms include swelling of the hands, feet and ankles.	Move to a cooler location (e.g. an air conditioned area) and rest. Elevate swollen legs.
Heat rashes (Include picture)	Symptoms include red bumps, itching and discomfort.	Keep skin clean, cool and dry. Move to a cooler location (e.g. an air conditioned area) and rest.

Heat and vulnerable groups

Groups that are vulnerable to heat	Challenges
Older adults (like your grandmother, grandfather, or an older neighbour)	Cannot always tell if they are thirsty. Do not sweat as much as a young person. Can get dehydrated very easily. Sometimes have difficulty moving around. Sometimes isolated or alone.
Infants and young children (like your little brother, sister or cousin)	When playing outside, their body temperature increases a lot. Their body temperature in the heat increases so fast because of their smaller size. Do not always sweat as much as older kids. They need their parents, babysitter or caregiver to help them if they are not feeling well.
People with chronic illness or physically impaired (someone who is sick, or someone in a wheelchair)	They take certain medications that make them more sensitive to heat. Are sometimes confined to their beds or are dependent on caregiver, family or friends for help with everyday things. Isolation – do not leave home and socialize.
Low income, homeless, living alone	Have limited financial resources that can prevent access to protective measures. Not as much access to clean water and cool places. Limited access to health care. Can have higher rates of alcohol and drug dependency. Social isolation.
Newcomers to Canada and tourists	Language barriers for non-English or French speakers. Cultural differences (food, clothing). Limited knowledge of health and social service programs.
Those who work in the heat (e.g. farmers, construction workers, miners)	Increased physical strain. Need to get the job done. Irregular exposure to heat (lack of acclimatization).
The physically active (marathon runners, recreational athletes, people who walk or bike)	Increased physical strain. Reduced perception of risks. Expectation of usual performance in the heat.

Being prepared for the heat

Since the meteorological conditions that can lead to heat stress can be forecasted and communicated to the public, heat-related illnesses are largely preventable through knowledge, education and adaptive behavioural actions.

As a teacher, you are in an excellent position to help your students adopt safe behaviour by promoting adequate preparation for extreme heat events. Educating the students regarding effective prevention of heat-related illness can help them avoid more serious health problems when exposed to extreme heat.

Here are a few ideas to promote amongst the students:

Heat and sports safety; heat and outdoor safety

- Drink plenty of water or natural fruit juice mixed with water. Don't wait to feel thirsty. Find a reusable bottle that is fun to drink from and use it as a reminder to drink water regularly. Be eco-friendly and think about the environment.
- Eat fruits and vegetables that have high water content.
- Wear a hat (with wide brim) and loose-fitting, light-coloured clothes made from breathable fabric. Sunglasses are very useful to protect your eyes from UV rays.
- Splash your face with cold water if you feel hot.
- When necessary, wear sunscreen and bug repellent.
- Locate a shaded place where you can cool off or bring a sun umbrella to reduce your exposure to radiant heat from the sun.
- When exercising or playing sports, remember to take extra water breaks, move into the shade and remove gear such as helmets or equipment to let your body cool off.
- Talk to your parents if you feel it is too hot to practise a sport or outdoor activities. See if it is possible to move the activity to an air conditioned environment. That way you will be able to stay cool and maintain your activity level even when it is very hot outside. You could ask to reschedule the activity if necessary. Mornings or nights are better times for sports on hot summer days.
- Drink before and after every physical activity and cool off after the activity in a cool place.
- When you get home, take a cool bath or shower until you feel refreshed.
- Choose activities that are not too tiring or go to the pool during the day.
- Go to the air conditioned library or the mall for a couple of hours.
- If you do not have an air conditioner in your home, play in a cool place, such as the basement, for awhile.

Heat and school

- Bring a reusable bottle of water that can be refilled at the water fountain. Be eco-friendly. Think about the environment.
- Wear breathable, loose-fitting, light-coloured clothes. Bring a hat with wide brim for recess.
- Splash your face with cold water when you go to the washroom.
- Ask the teacher if it is possible to move to a cooler place or to a part of the school where there could be air conditioning, such as the library or the gym.
- Ask mom or dad to put fruits and vegetables in your lunchbox.
- When you go out for recess, stay in the shade and choose activities that are not too tiring.

Reminder

General safety rules and instructions in case of fire.
To ensure that you make the best of the situation in case of a fire or any other emergency, be ready!

- Take a first aid course offered by the Canadian Red Cross.

And remember:
- Remain calm (avoid panicking).
- Always use staircases instead of elevators.
- Never go back into a room that is on fire.

Daily activities

Teacher
- Inform your students on the instructions to follow in case of an evacuation.
- Make sure emergency equipment in your room is functional.
- Ensure that emergency exits in your room are readily accessible.
- Assign some students the task of closing windows.
- At higher elementary or secondary levels, ask some students to assist those with mobility disabilities.

Students
- Get information from your teacher if you do not know what to do in case of a fire.

Instructions during emergencies

If you SMELL SMOKE

Teacher
1. Immediately have everyone evacuate the room.
2. Evacuate from the closest emergency exit.
3. Set off the manual fire alarm on your floor (red box) and notify a person who is in charge.

Students
1. Evacuate in a single file, calmly, silently and without running in the direction identified by your teacher.
2. Leave your personal belongings where they are.

If you HEAR THE ALERT SIGNAL

Teacher
1. Ask students who were assigned specific tasks to close all windows in the room and to assist their friends who need help.
2. Take a list of students with you.
3. Be ready to evacuate with the students.

Note: If the alert is unfounded, wait for instructions from management.

Students
1. Immediately stop all your activities.
2. Close the windows that you have been assigned to.
3. Prepare to help the students your teacher has identified.
4. Calmly and silently wait for the fire alarm and be ready to evacuate.

Note: If the alert is unfounded, wait for your teacher's instructions

If you HEAR THE FIRE ALARM

Teacher
1. Have students evacuate the room without taking their personal belongings and close the door.
2. Evacuate towards the meeting place that was identified with your group.
3. Make a roll call of the students and notify the floor coordinator.
4. Supervise your group and wait for authorization from the coordinator before re-entering the building.

Students
1. Leave the room in a single file, calmly, silently and without running, in the direction identified by your teacher.
2. Walk normally through the corridors and hold the stair rail to avoid falls.
3. Keep your rank and remain close to the teacher.
4. Never go back into the building!
5. Keep silent and follow the teacher's instructions.

Adapted from: **Plan d'évacuation d'une école. Guide pratique,** Ministère de la Sécurité publique du Québec, Direction générale de la sécurité et de la prévention (September 1996)

Emergency response and recovery scenario

3 p.m., June 19 • You live in a coastal community called Great Winds. It is the afternoon of June 19. Environment Canada issued a hurricane watch a few hours ago and anticipates that the storm will increase in intensity overnight.

1:15 a.m., June 20 • It is now 1:15 in the morning of June 20th. Environment Canada now reports that the storm has increased to a category 4 on the Saffir-Simpson* scale and issues a hurricane warning. The storm is still offshore but is expected to make landfall within 12 hours. The emergency manager of Great Winds contacts the mayor to request that neighbourhoods located in the Bay of Great Winds be evacuated immediately. The mayor agrees. The emergency manager and the mayor then contact the chief of police. The emergency manager and the city public information officer contact local television and radio stations. People who live in the Bay of Great Winds are asked to leave their homes as soon as possible and to find shelter at the meeting place identified in their family's evacuation plan, outside of town.

2:00 p.m. • Canadian Red Cross volunteers have opened an emergency shelter in the nearby town of Whispers, located three kilometres inland. It is safer and can welcome evacuated families who could not find shelter with a friend or family member.

2:55 a.m., June 21 • By 2:55 a.m., it appears that the storm has passed. It is very quiet. But suddenly, the storm returns with the winds going in the opposite direction. The eye of the storm has passed directly over the Bay.

3:55 a.m. • At 3:55 a.m., fallen trees have knocked down communication and power lines. All power has been lost in the city. There is widespread flooding in streets of the neighbourhoods located in the Bay of Great Winds. Fires have broken out in parts of the city because of the careless use of candles. Streets are blocked by debris, making movement by police and emergency workers very difficult.

6:00 a.m. • At 6:00 a.m., the worst of the storm has passed. Some people who refused to evacuate are hurt and need medical attention. There are a few fires burning in the city. Power is still out and roads are blocked. Many of the people who were evacuated want to return to their homes and assess the damage. The problem is that the roads are not safe and many of the homes are not safe to enter.

6:30 a.m. • The city's emergency manager has convened a meeting of the emergency response team at 6:30 a.m. You are there.

* To find out more about the Saffir-Simpson scale, visit the following Web site:
http://www.atl.ec.gc.ca/weather/hurricane/kids.html

Islands in distress

By Romeo Tornado

January 5, 2005, Climate Review—The official magazine on climate change

AID TO 45 SMALL ISLAND STATES, HOME TO THE PEOPLE MOST VULNERABLE TO CLIMATE CHANGE AND NATURAL DISASTERS, IS DECLINING.

How do small island states deal with rising sea levels? How do they react to the declining foreign aid that they are faced with? These are some of the questions that the United Nations Conference will try to answer on January 10, 2005.

When the threat is looming…
Known as SIDS or Small Island Developing States, the islands have a total population of 50 million; although they include some of the world's top tourist destinations, such as the Seychelles and Caribbean islands, most are impoverished and isolated. But a threat is looming…

The Maldives, stricken by the Indonesian tsunami disaster on December 26, 2004, as well as other islands, could very well disappear altogether by the end of the century. Rising sea levels and tropical storms, such as those that hit the Caribbean many times over the past few years, represent very real danger. Indeed, even though small island states are widely distributed across the world, they are all vulnerable to natural and man-made disasters because of their small size. These disasters threaten the forests, agriculture and the fisheries.

It never rains… it pours.
Small Island Developing States encounter numerous difficulties, but the most severe problem is the shortage of fresh water. It is reported that Cape Verde, the Comoros and the Maldives are already at or below the stress threshold. Increasingly frequent droughts caused in part by climate change do not help. Everywhere, people have to find means to harvest rainwater. Rising sea levels and increasing wave heights contribute to the erosion of beaches and to the flooding of agricultural land. And, as if that were not enough, the islands cannot count on a dependable early warning system in case of a tropical storm or a tsunami and their buildings are not strong enough to resist to these events. If foreign aid is not there, what will they do?

Adapted from: Paul BROWN, "Aid for vulnerable islands declines", The Guardian, January 10, 2005

Glossary

Action plan: Set of measures taken to plan something, an action or behaviour.

Alert: Set of actions taken to inform the authorities, the assistance personnel and the population of an actual or possible danger.

Assistance: Set of measures taken to protect persons (evacuation, shelter, material help, etc.) and safeguard their belongings and assets.

Authority: Person or group of persons one can refer to for help.

Cataclysm: Disruption on the Earth.

Catastrophe: A widespread disaster; sudden event that can cause disruption and may lead to damage and death.

Crisis: Emergency of a political nature, or a disaster that was managed in such a way to lead to other problems of a greater nature.

Demobilization: Persons, assistance or organizations returing home to regular daily activities in an orderly fashion after a disaster.

Disaster: Catastrophic event that can lead to human and material losses.

Disaster caused by human activity: Disasters for which human beings may be involuntary agents (industrial accidents such as explosions, fires or release of hazardous materials; socio-economic disasters such as pollution; socio-political disasters such as disrespect for human rights).

Distress: Critical and dangerous situation.

Emergency: Event that may bring physical or psychological harm to one or more persons or which can cause material damage and may require rapid assistance that a first aid organization can provide.

Emergency kit: Bag that is kept in the house and/or in the car that contains essential objects when facing an emergency situation.

Emergency situation: Situation that requires immediate attention.

Emergency supplies: Clothes, non-perishable food, hygiene articles and safety equipment that will serve in case of mandatory confinement during a disaster.

Essential objects: Objects that are necessary.

Essential needs: Need for food, clothing and shelter.

Evacuation plan: Organized actions that describe how to evacuate one's home or a public place when it is necessary to leave quickly because of an emergency situation.

First aid worker: Member of a first aid organization that will bring help to the victims of an accident or disaster.

Human element: That which is made by human beings (e.g. a building).

Mobilization: Set of actions taken to activate the assistance resources.

Mitigation: Series of measures taken in order to lessen the devastating effects of a disaster and to limit its impact on the well-being of populations and on their property.

Natural element: That which is made by nature (e.g. a tree).

Potential danger: Threat, risk that could materialize if the conditions were present.

Prevention: A set of measures taken to prevent danger, risk or harm from occurring.

Recovery: Return to a normal situation by reintegrating people who were evacuated and implementing programs that will allow people to get back to normal activities (getting public services back into operation, rebuilding equipment, production, etc.).

Ring of fire: Volcanoes on the edge of the Pacific Ocean.

Safety rules: Conduct principles.

Survival kit: Case, package or bag containing objects and supplies that will last for three days and that can be useful in case of an evacuation.

Trauma: Event that can cause emotional or physical problems.

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*** - Available in French only.*

PROGRAM EVALUATION

Name of School:

Name of Educator:

Grade Level:

Preparedness Program:

- ☐ It can happen, be ready
- ☐ Facing the unexpected, be prepared
- ☐ Be ready, be safe

To be filled out by the educator.
For each of the following statements, please check the box that best corresponds to your level of agreement.

CONTENT AND PROCESS	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
The preparedness program really makes youth more aware of the need to be ready in case of an emergency.					
The preparedness program is well suited to a school setting.					
The preparedness program is easy to implement.					
The preparedness program is of high quality.					
The content of the preparedness program allows for the attainment of objectives set by the Ministry of Education of your province or territory.					
The content of the program is diversified.					
Young participants liked the content of the preparedness program.					

CONTENT AND PROCESS	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
The teaching approach used in the preparedness program is adapted to participants' levels.					
The teaching approach used in the preparedness program is appropriate.					
FUTURE USE I liked the program and will continue to facilitate preparedness activities in my class.					

WHICH ACTIVITIES HAVE YOU COMPLETED?

WHICH ACTIVITIES ARE YOU PLANNING TO LEAD IN THE FUTURE?

OTHER COMMENTS:
Would you have any suggestions to improve the program?

RETURN ADDRESS:
Thank you for returning the completed questionnaire to:

Canadian Red Cross/Expect the Unexpected Program
170 Metcalfe Street, Suite 300
Ottawa, ON, K2P 2P2

WE APPRECIATE YOUR VALUABLE FEEDBACK!

The Canadian Red Cross: anywhere, anytime

The Canadian Red Cross[1] is one of the 187 national Societies which, along with the International Committee of the Red Cross (ICRC) and the International Federation of Red Cross and Red Crescent Societies (the Federation), form the International Red Cross and Red Crescent Movement. Its mission is to improve the lives of vulnerable people by mobilizing the power of humanity in Canada and around the world.

The Canadian Red Cross Society is a volunteer organization that provides the public with humanitarian services and emergency relief:

- In the area of prevention against disasters or conflicts or when they occur in Canada and around the world.
- Through community outreach in the fields of health and social services.

Humanitarian and relief services are provided according to the Fundamental Principles[2] of the International Red Cross and Red Crescent Movement. Canadian Red Cross programs are made possible by virtue of thousands of volunteers acting on its behalf and by Canadians' generous financial assistance.

The Fundamental Principles of the Red Cross

Humanity

The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health to ensure respect for the human being. It promotes mutual understanding, friendship, co-operation and lasting peace amongst all peoples.

Impartiality

It makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavours to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.

Neutrality

In order to continue to enjoy the confidence of all, the Movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious or ideological nature.

Independence

The Movement is independent. The national Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.

Voluntary service

It is a voluntary relief movement not prompted in any manner by desire for gain.

Unity

There can only be one Red Cross or one Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.

Universality

The International Red Cross and Red Crescent Movement, in which all Societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.

[1] In conformity with the law, use of the Red Cross emblem or name in Canada is exclusively reserved to the Canadian Red Cross and to military medical units (Geneva Conventions Act, R.S. 1985, c. G-3).

[2] This text is adapted from the fundamental principles proclaimed by the 20th International Red Cross Conference held in Vienna in 1965. Please note that the original text was revised and included as part of the Statutes of the International Red Cross and Red Crescent Movement, which were adopted at the 25th International Red Cross Conference, held in Geneva in 1986.

Canadian Red Cross

Through
the media
sponsorship of:

The Weather Network
theweathernetwork.com